

Philip Morris International - Climate Change 2018

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Who we are:

Philip Morris International Inc. (PMI) is a leading international tobacco company with a diverse workforce of approximately 80,600 people across the globe as of December 31, 2017.

In 2017, our products were sold in over 180 markets, and we operated 46 production facilities globally.

Headquartered in New-York, US; PMI has its Operations Center in Lausanne, Switzerland.

What we do:

PMI manufactures and sells cigarettes and other nicotine-containing products in markets outside of the United States of America. Our portfolio comprises both international and local brands and is led by Marlboro, the world's best-selling international cigarette. In 2017, PMI net revenues amounted to USD 78.1 billion including excise taxes on products worth USD 49.4 billion. 2017 net revenues less excise tax amounted to 28.8 billion USD. 2017 Operating Income was USD 11.5 billion. PMI's 2017 total shipment volume for cigarette and heated tobacco units was 798.2 billion (761.9 billion cigarettes and 36.2 billion heated tobacco units).

Our vision:

We are building our future on smoke-free products that are a much better consumer choice than continuing to smoke cigarettes. Our vision is that these products ultimately replace cigarettes to the benefit of adult smokers, society, our company and our shareholders.

Our strategy:

To this end our core strategies are:

- Smoke-Free: Develop, market, and sell smoke-free alternatives, and switch our adult smokers to these alternatives, as quickly as possible around the world
- Transition: Transition our resources from cigarettes to smoke-free alternatives
- Regulation: Propose regulatory policies that encourage the replacement of cigarettes by smoke-free alternatives
- Sustainability: Drive world-class sustainability programs across our entire value chain
- Talent: Be the employer of choice for our global workforce and work tirelessly to attract the best talent
- Transparency: Share our progress, and invite dialogue and independent verification

· Growth: Provide superior returns for our shareholders

Sustainability:

For PMI, sustainability means creating long-term value while minimizing the negative externalities associated with our products, operations and value chain. From the more than 350,000 farmers from which we source tobacco right up to the approximately 150 million consumers of PMI products, we have an important impact on the communities and the environment around us, which we are committed to address. We cannot achieve this alone. The engagement beyond our own operations is key, as this is where the most significant impacts take place. While operating in a highly regulated environment, we strive to go beyond mere compliance to achieve a sustainable smoke-free future.

Our business has a significant, global supply chain organized by five main categories. We have a large agricultural supply chain, ranging from tobacco growers to producers of other agricultural products, such as clove, menthol and guar gum. Another part of the supply chain consists of manufacturers of direct materials used to produce cigarettes and other tobacco products, such as acetate tow (for cigarette filters) and paper (both cigarette paper and packaging materials). Key to our business are also the manufacturers of machines for our cigarette and heated tobacco products factories, a highly specialized industry. A recently added part of our supply chain consists of the manufacturers of electronic devices for heated tobacco products and e-cigarettes. Finally, we work with thousands of suppliers of goods and services that are not specific to the tobacco business, but essential for any business, such as office equipment etc. As a responsible business, we want to understand and continuously address potential sustainability issues in our global supply chain. We are working with business partners to proactively identify, manage, and reduce risks, and create shared value.

PMI supported the call for a price on carbon in the Paris Climate Agreement. Our targets, recognized by the Science-Based Targets initiative in 2017, demonstrate how PMI can contribute to keeping global warming below 2°C based on pre-industrial levels. We have set our performance baseline as 2010. Against that baseline, we aim to reduce absolute CO₂e emissions from our own operations by 30% by 2020, 40% by 2030 and 60% by 2040. We are well on track in 2017, achieving an overall reduction of 31% for our GHG scopes 1 and 2 emissions, driven by the use of greener electricity, exceeding our 2020 target. Across our value chain, we aim to reduce absolute CO₂e emissions by 40% by 2030. In 2017, we achieved a 30% reduction across scopes 1, 2 and 3, driven by gains in curing efficiency and use of greener fuels in tobacco agriculture. We also have a long-standing commitment to reduce the emissions intensity of our value chain (measured in CO₂e per million cigarettes equivalent) by 30% by 2020. In 2017, we're on track to meet this target, reaching 24% reduction vs 2010.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1 2017	December 31 2017	No	<Field Hidden>
Row 2	<Field Hidden>	<Field Hidden>	<Field Hidden>	<Field Hidden>
Row 3	<Field Hidden>	<Field Hidden>	<Field Hidden>	<Field Hidden>
Row 4	<Field Hidden>	<Field Hidden>	<Field Hidden>	<Field Hidden>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

Albania
 Algeria
 Argentina
 Armenia
 Australia
 Austria
 Bangladesh
 Bosnia and Herzegovina
 Brazil
 Bulgaria
 Canada
 Chile
 China
 China, Hong Kong Special Administrative Region
 China, Macao Special Administrative Region
 Colombia
 Costa Rica
 Croatia
 Czechia
 Democratic People's Republic of Korea
 Denmark

Dominican Republic
Ecuador
Egypt
El Salvador
Estonia
Finland
France
Georgia
Germany
Greece
Guatemala
Hungary
India
Indonesia
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kuwait
Latvia
Lebanon
Lithuania
Malaysia
Mexico
Morocco
Netherlands
New Zealand
Nicaragua
Norway
Pakistan

Panama
Paraguay
Peru
Philippines
Poland
Portugal
Republic of Korea
Republic of Moldova
Réunion
Romania
Russian Federation
Senegal
Serbia
Singapore
Slovakia
Slovenia
South Africa
Spain
Sweden
Switzerland
Taiwan (Province of China)
Thailand
The former Yugoslav Republic of Macedonia
Trinidad and Tobago
Tunisia
Turkey
Ukraine
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United Republic of Tanzania
Uruguay
Venezuela (Bolivarian Republic of)

Viet Nam

Other, please specify

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C-AC0.6/C-FB0.6/C-PF0.6

(C-AC0.6/C-FB0.6/C-PF0.6) Are emissions from agricultural/forestry, processing/manufacturing, distribution activities or emissions from the consumption of your products – whether in your direct operations or in other parts of your value chain – relevant to your current CDP climate change disclosure?

	Relevance
Agriculture/Forestry	Elsewhere in the value chain only [Agriculture/Forestry/processing/manufacturing/Distribution only]
Processing/Manufacturing	Both direct operations and elsewhere in the value chain [Processing/manufacturing/Distribution only]
Distribution	Both direct operations and elsewhere in the value chain [Processing/manufacturing/Distribution only]
Consumption	Yes [Consumption only]

C-AC0.6b/C-FB0.6b/C-PF0.6b

(C-AC0.6b/C-FB0.6b/C-PF0.6b) Why are emissions from agricultural/forestry activities undertaken on your own land not relevant to your current CDP climate change disclosure?

Row 1

Primary reason

Do not own/manage land

Please explain

We don't own the tobacco farms that supply our tobacco leaf each year, but the farmers who run them are a crucial part of our economic, environmental, and social footprint. We're working directly with them and our suppliers to promote sustainable farming as part of our Good Agricultural Practices (GAP) program.

C-AC0.7/C-FB0.7/C-PF0.7

(C-AC0.7/C-FB0.7/C-PF0.7) Which agricultural commodity(ies) that your organization produces and/or sources are the most significant to your business by revenue? Select up to five.

Agricultural commodity

Tobacco

% of revenue dependent on this agricultural commodity

More than 80%

Produced or sourced

Sourced

Please explain

100% of our heat sticks and cigarettes sales require tobacco

Agricultural commodity

Timber

% of revenue dependent on this agricultural commodity

More than 80%

Produced or sourced

Sourced

Please explain

100% of our heat sticks and cigarettes sales require timber based materials

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board/Executive board	In 2017, the highest level of direct oversight for climate-related issues within PMI lied with the Product Innovation and Regulatory Affairs Committee of the Board of Directors. The Committee is comprised of 9 out of the 13 Directors and was chaired by Harold Brown (Counselor, Center for Strategic and International Studies). In 2018, as part of our continued focus on sustainability, the Board has added oversight of our sustainability strategies and performance to the charter of the Board's Nominating and Corporate Governance Committee that advises the Board on sustainability matters. Part of the Board's oversight is a focus on management's efforts to enhance shareholder value responsibly and sustainably. The Board has been selected for oversight of climate-related issues since they are responsible for overseeing the direction and management of the company and these risks are critical to the success of our business going forward.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives 	<p>The Board of Directors is the governing body for PMI and is a team of seasoned advisors who help oversee the company's full range of activities Part of the Board's oversight is a focus on management's efforts to enhance shareholder value responsibly and sustainably. The Board has established various standing Committees to assist with the performance of its responsibilities and is regularly informed of the company's performance, future plans, and significant issues affecting the business. The Board meets typically 7 times per year with additional meetings held as necessary. The Board of Directors believes that environmental, social, and governance (ESG) factors relevant to the company's business are important to PMI's long-term success, and in 2017, the Product Innovation and Regulatory Affairs Committee was responsible for reviewing and monitoring PMI's programs on societal alignment issues, including climate change, with the PMI's Chief Executive Officer and the Senior Vice-President Operations. Climate change was identified as one of the PMI 22 Strategic Enterprise Risks that were approved by PMI Shareholders as it could result in natural disasters, water scarcity, mass human migration, agricultural and geopolitical instability, which may impact PMI's ability to operate. Effectively</p>

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
	<p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<p>addressing these risks is critical to the achievement of PMI's strategic objectives and as such should be considered during the annual Integrated Risk Assessment (IRA) process. The IRA results are presented to the Corporate Risk Governance Committee (CRGC) as well as the Local and Regional Management and Global Function Heads. In the context of the general Board meetings, the Product Innovation and Regulatory Affairs Committee met three times in 2017 (2018 PMI Proxy Statement) Since March 2018, the Board's Nominating and Corporate Governance Committee oversees our sustainability strategies and performance, and advises the Board on sustainability matters. The four other committees (Audit, Compensation and Leadership Development, Finance, Product Innovation and Regulatory Affairs) assist the board with a full range of activities that also include sustainability related matters.</p>

C1.2

(C1.2) Below board-level, provide the highest-level management position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify (Senior Vice President, Operations)	Both assessing and managing climate-related risks and opportunities	Half-yearly
Sustainability committee	Both assessing and managing climate-related risks and opportunities	Half-yearly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored.

Climate change is embedded within our overall business strategy, our Guidebook for Success (Code of Conduct) and our Responsible Sourcing Principles. It is integrated into normal business activities and forms part of our annual Long Range Planning process which reviews and sets business direction. In 2017, the strategy was developed/reviewed based on prior year performance, sustainability commitments and objectives, regulatory/external developments, risk/opportunity assessments, stakeholder interest and business changes, through functional management teams up to our Senior Management Team (Management Board). Our Senior Vice President, Operations (SVP Operations) is a member of PMI's Senior Management Team (Management Board); he reports to PMI's Chief Executive Officer (CEO) and is delegated with operational responsibility. In 2017, the SVP Operations was the highest level of management of climate-related issues and responsible for reviewing and monitoring PMI's objectives, strategies and action plans related to climate change with the CEO and reported to the Product Innovation and Regulatory Affairs Committee of the Board of Directors.

Currently, our Senior Management Team is responsible for reviewing sustainability matters, including climate-related issues – strategy, key programs, and budget — through a cross-functional representation, coordinated by the Sustainability Team led by the Vice President Social & Economic Affairs, who reports to the President External Affairs & General Counsel, a member of PMI's Senior Management Team. The Sustainability Team strives to equip our Company with the relevant know-how and expertise in view of the changing nature of our business. From an operational perspective, the Sustainability Team manages and coordinates our sustainability work across PMI functions and regions seeking to ensure it is embedded at all levels of the organization. Finally, three cross-functional working groups have been created to manage environmental, social and reporting matters that are overseen by committees composed of senior function heads.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

Chief Executive Officer (CEO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Our CEO specifically covers EHS results (including carbon footprint reductions against targets) in the assessment of our annual company-wide performance that is reviewed by the Compensation and Leadership Development Committee of the Board of Directors. Accordingly, these results are included in our overall performance rating which determines the cash bonuses for the management group and other eligible employees. Executive management covering EHS topics are specifically appraised each year for performance against targets, including those relating to climate change.

Who is entitled to benefit from these incentives?

Management group

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

Our CEO specifically covers EHS results (including carbon footprint reductions against targets) in the assessment of our annual company-wide performance that is reviewed by the Compensation and Leadership Development Committee of the Board of Directors. Accordingly, these results are included in our overall performance rating which determines the cash bonuses for the management group and other eligible employees. Executive management covering EHS topics are specifically appraised each year for performance against targets, including those relating to climate change. The assessment of Environment and Health and Safety (EHS) results (which includes annual performance against our carbon footprint reduction targets) directly influences the annual performance rating of our SVP Operations and certain members of our Management Team. This covers the annual cash incentive compensation and long term restricted stock incentive compensation elements for those roles.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Monetary reward

Activity incentivized

Other, please specify (Climate change mitigation projects)

Comment

Specific company awards such as the Chairman's Award and Excellence Awards, which are either cash or stock, are available for Energy Managers, EHS Managers, project teams and other employees who are responsible for climate change related initiatives and improvements.

Who is entitled to benefit from these incentives?

Energy manager

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

Managers, team members and others have energy efficiency and carbon footprint reduction targets set out in their annual performance objectives and are assessed against those targets in their annual performance appraisal. Energy efficiency and CO2 emissions reduction targets are set annually for at least three years for all of our manufacturing facilities.

Who is entitled to benefit from these incentives?

Environment/Sustainability manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

Managers, team members and others have energy efficiency and carbon footprint reduction targets set out in their annual performance objectives and are assessed against those targets in their annual performance appraisal. Energy efficiency and CO2 emissions reduction targets are set annually for at least three years for all of our manufacturing facilities

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Specific company awards such as “Above and Beyond the Call of Duty” (ABCD) awards for best practice initiatives in the areas of climate change, energy and carbon reduction

Who is entitled to benefit from these incentives?

Other, please specify (Employees in our operations center)

Types of incentives

Monetary reward

Activity incentivized

Behavior change related indicator

Comment

Employees from the Operations Center are encouraged to use public transportation. The annual fee for half-price railway subscription as well as a monthly public transport allowance is paid by the company for those employees who choose to use public transportation rather than commute in their private cars to work.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Recognition (non-monetary)

Activity incentivized

Behavior change related indicator

Comment

Annually many affiliates continue to perform voluntary awareness and promotion campaigns/programs in order to increase employees’ active participation in EHS programs and to make carbon footprint reduction part of the company's culture. Awards and recognition for best practices form a core element of such campaigns.

Who is entitled to benefit from these incentives?

Other, please specify (Operations employees (around 50,000))

Types of incentives

Recognition (non-monetary)

Activity incentivized

Emissions reduction project

Comment

Operations employees also have the opportunity to earn awards for best practice initiatives in the areas of climate change, energy and carbon reduction. This forms part of our operations “Lead, Lean and Learn” (3L) program which encourages innovation, continuous improvement and employee engagement.

Who is entitled to benefit from these incentives?

Buyers/purchasers

Types of incentives

Recognition (non-monetary)

Activity incentivized

Environmental criteria included in purchases

Comment

Tobacco leaf volume allocation depends, among other factors, on the performance of leaf suppliers that includes GAP implementation as well as achievement of strategic initiatives targets such as carbon footprint reduction. If leaf suppliers in a region or a market perform well, the buyer responsible for this region/market will not be limited by GAP underperformance in his purchase options, what will support the achievement of his annual objectives and therefore his performance evaluation.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	1	We evaluate short-term profits and losses as part of our annual financial reporting.
Medium-term	1	5	Our annual Long Range Planning process reviews and sets business direction over a 3 to 5 year horizon. Despite it is called PMI's Long Range Plan, it equates to “medium-term” in CDP terminology.
Long-term	5	15	The physical risks of climate change have the potential to materially impact our business., and thus we have therefore conducted climate risks assessments which have looked out to 2030. We chose that time horizon because it is hard for the climate models to get more granular and to accurately interpret the data.

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	In 2017, the Product Innovation and Regulatory Affairs Committee of the Board of Directors was responsible for reviewing and monitoring PMI's programs on societal alignment issues, including climate change. In the context of the general Board meetings, the Product Innovation and Regulatory Affairs Committee met three times during the year. Annual Integrated Risk Assessment process. Regular (every 3 year) climate change risk assessment considering risks that may impact PMI business in the next 15 years. Risks and opportunities are managed through number of initiatives and programs – see Section 2 for further detail. A key example would be our comprehensive Energy Management Program that includes ambitious short-term and long-term CO2 reduction targets.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

PMI Senior Management Team conducts a reassessment of Strategic Enterprise Risks on a regular basis and identified 22 risks and related actions/opportunities in the last cycle. Effectively addressing these risks is critical to the achievement of PMI's strategic objectives and as such should be considered during the annual Integrated Risk Assessment (IRA) process. Climate change was identified as one of the Strategic Enterprise Risks as it could result in natural disasters, water scarcity, mass human migration, agricultural and geopolitical instability, etc. which may impact PMI's ability to operate. The main elements developed to mitigate this risk are:

- Regularly conduct Climate Change Risk Assessment to ensure proper understanding of the impact on PMI businesses (leaf growing areas, manufacturing sites, distribution centers, harbors, sea transportation routes)

- Strengthen Sustainability effort to minimize PM's impact on climate change via numerous strategic initiatives to reduce our carbon footprint (see section C3.1c) and manage sustainably water resources.
- Explore opportunities to spread sourcing of materials geographically and robust business continuity programs to ensure continued supply of materials and production

The mitigation action plans are verified by three assurance functions (Corporate Audit, Internal Controls and Ethics & Compliance) and Compliance Local Program Owners.

Risk-centric and top-down approach and focused on risks actionable by the 3 assurance functions (Corporate Audit, Internal Controls and Ethics & Compliance) and Compliance Local Program Owners. It is divided in 4 phases: 1)

Global/Regional/Local Risks identification taking into consideration the PMI 22 Strategic Risks, Key Global Projects and Ethics & Compliance Risk Briefs, 2) Risk Calibration, 3) Top-down & Bottom-up Action Plan Alignment (Top-down definition of local risk assurance activities deriving from global risks/initiatives; Bottom-up assessment as a 2nd step, mainly focusing on local risks), 4) Presentation of the IRA results to the Corporate Risk Governance Committee (CRGC) as well as the Local and Regional Management and Global Function Heads.

Risk-centric and top-down approach and focused on risks actionable by the 3 assurance functions (Corporate Audit, Internal Controls and Ethics & Compliance) and Compliance Local Program Owners. It is divided in 4 phases: 1)

Global/Regional/Local Risks identification taking into consideration the PMI 22 Strategic Risks, Key Global Projects and Ethics & Compliance Risk Briefs, 2) Risk Calibration, 3) Top-down & Bottom-up Action Plan Alignment (Top-down definition of local risk assurance activities deriving from global risks/initiatives; Bottom-up assessment as a 2nd step, mainly focusing on local risks), 4) Presentation of the IRA results to the Corporate Risk Governance Committee (CRGC) as well as the Local and Regional Management and Global Function Heads.

The CRGC comprising the Chief Operating Officer, the CFO, the Vice President and Controller, the Vice President, Corporate Audit, and the Vice President, Chief Ethics & Compliance Officer. Ownership of each of the prioritized risks is assigned to a member of senior management, and oversight of the management of each risk is assigned to a particular Board Committee or to the full Board. Management reports on these risks to the appropriate Committee and to the full Board throughout the year.

We have an extensive risk control program whereby locations with values exceeding \$30 million are surveyed by engineers from our property insurer, FM Global. We have a number of locations that do have flood exposures, however this is addressed through recommendations to protect openings, raise equipment, and implement Flood Emergency Response Plans. Currently, I do not believe we have more than 2 or 3 flood related recommendations worldwide.

The risk control program is based on the concept of a Highly Protected Risk (HPR). We do not have “hard and fast” rules for risk ranking but the following general approach is followed. Recommendations for risk improvement are generated by the insurer risk engineer if the expected risk reduction exceeds the cost to comply (roughly by a factor of 10 or more).

Recommendations with a loss expectancy of \$10 million impact the HPR rating. Internally, we focus on recommendations above the \$50 million range as this can often be a long process involving substantial capital investment and disruption to operations. The process is as follows:

Site survey conducted by FM Global → Report issued to Risk Management → Recommendations reviewed and commented by Risk Management, transmitted to Operations (site top management) → Site evaluation of technical requirements, costs, budgets and creation action plan → Action plan provided to Risk Management → Risk Management follows up with Operations as needed, shares plan with Insurers → Repeat

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	We are subject to international, national and local environmental laws and regulations in the countries in which we do business, which we consider in our climate-related risk/opportunity assessment process. We have specific programs across our business units designed to meet applicable environmental compliance requirements and reduce our carbon footprint, waste, water use and energy consumption. Our robust environmental management systems and ambitious science-based targets around climate change help prepare us for these. Examples of this risk are EU Trading Scheme which we expect that in case of increased prices could have a low impact in our operations or removal of tax incentives like the one existing in Germany. EU Emissions Trading Scheme led us to introduce process changes in our factories such as isolation of heating, cooling and steam system pipes in our factory in Berlin. Another driver has been energy taxes, such as in Germany, which encouraged PMI to implement an Energy Management Program to ISO 50001 certification that allow us to save energy taxes estimated at \$800k.
Emerging regulation	Relevant, always included	Our operations throughout the globe are subject to various climate-related regulations, which we consider in our climate-related risk/opportunity assessment process. There is a clear international trend towards increasing and stricter climate-related regulations which could increase our operational costs. We track these through our Energy Management Systems and regulatory radar screen. Our robust environmental management systems and ambitious science-based targets around climate change help prepare us for these regulations. In addition we consider: i) Subsidies for renewable energy generation in different countries, which are factored into our cost-benefit analyses for pertinent projects so that improved return on investment can potentially be delivered. Cost-Benefit analyses and renewable energy assessments have been performed in Turkey, the Philippines, Portugal and Poland. We also have the potential to identify and support Clean Development Mechanism (CDM) project opportunities for our tobacco leaf suppliers. ii) EU Emission Trading Scheme (ETS): Opportunities are linked to widening the EU ETS carbon trading market to include EU accession countries where PMI has facilities. Opportunities also exist in other regions (e.g.

	Relevance & inclusion	Please explain
		<p>Australia, Mexico) where PMI has facilities that are considering introducing similar schemes. There is the potential to use our experience of these schemes to enable performance ahead of allocated emissions and generate carbon credits. Starting from 2 EU affiliates which were in the EU ETS in 2015 (Netherlands and Portugal, which were delisted in 2016 as they moved below the total combustion capacity threshold), there is the potential to trade internally with other PMI affiliates and generate energy and CO2 savings. iii) Energy taxes; Energy Efficiency; Incentives; Infrastructure/Buildings Directive – promoting energy reduction at source (all EU factories); reviewing the potential for combined heat and power; renewable energy and buildings upgrade; vii) Energy Labeling Directive – for PMI's conventional products and potential future Reduced-Risk Products (which can have related electronic components). We estimate a cost of over \$250K excluding additional manufacturing costs associated with labeling.</p>
Technology	Relevant, always included	<p>We continuously assess risks and opportunities with technological improvements that support the transition to a lower-carbon, energy-efficient economic system. As an example of this risk is our new electronics manufacturing suppliers. Electronics suppliers are new partners to PMI and are often in geographies where we have not previously done significant procurement of direct materials (mainly China and Southeast Asia). We assessed through LCAs the risk around carbon footprint increase due to new electronics supplier and included an electronic supplier in our CDP supply chain program to gather primary data in 2018. Our robust environmental management systems and ambitious science-based targets around climate change help prepare us for these. For instance, we installed three high-efficiency, tri-generation power plants – systems which generate heat, cold, and power in one efficient combined process – coupled with solar photovoltaic energy generation in Indonesia and Turkey in 2017. Subsidies for renewable energy generation are factored into our cost-benefit analyses to help transition to a lower-carbon, energy-efficient economic system so that improved return on investment can potentially be delivered. Cost-benefit analyses and renewable energy assessments have been performed in Turkey, Philippines, Portugal and Poland, countries which offer these subsidies. We estimate the overall impact of subsidies for renewable energy generation to our various locations throughout the globe to be over \$1M.</p>
Legal	Relevant, always included	<p>We are subject to international, national and local environmental laws and regulations in the countries in which we do business. We have specific programs across our business units designed to meet applicable environmental compliance requirements and reduce our carbon footprint, waste, water use and energy consumption. We track these through our Energy Management Systems and regulatory radar screen. We have a consistent environmental and occupational health, safety and security management system (EHSS) at all our manufacturing centers. We also conduct regular safety assessments at our offices, warehouses and car fleet organizations. The effectiveness of our EHSS management system is validated by an external certification body, in accordance with internationally recognized standards for safety and environmental management. Our subsidiaries expect to continue to make investments in order to drive improved performance and maintain compliance with environmental laws and regulations. We assess and report the compliance status of all our legal entities on a regular basis. We report externally about our climate change mitigation strategy, together with associated targets and results in reducing our carbon footprint on our website and other external reports and through the CDP. We have management and controls in place to review and minimize our exposure to climate change risks. Our robust management systems and ambitious science-based targets around climate change also help prepare us for these. In 2017, we did not have any</p>

	Relevance & inclusion	Please explain
		climate-related litigation claims. For instance, in Germany, we implemented an Energy Management Program to ISO 50001 certification that allow us to save energy taxes and reduces future exposure to any litigation in this area, estimated at \$800k.
Market	Relevant, always included	<p>Today's consumers expect to see more sustainable products that lower environmental impact. Ever increasing environmental awareness of consumers influences their product selection and buying decisions. It is widely believed that consumers will continue to place increased value on recyclability and the perceived environmental credentials of packaging – at the same time, demand for proof of sustainability claims could grow, for instance in the demand for LCA data. We manage this through sustainability and climate change strategy, programs and transparent communications including our website, our UN Global Compact Communication on Progress in 2016 and in our sustainability report since 2017, CDP disclosure, carbon footprinting of new products (e.g. RRPs) and packaging developments. We are also looking at initiatives – including strengthening our product LCA – that can help us build closer cooperation within our value chain to help our stakeholders understand environmental impacts of different packaging alternatives. We undertook LCA projects, including revisiting elements of our carbon footprint assessment as a cost of approximately \$100k in 2015 that resulted in a more accurate baseline and model in 2016. Due to the ramping up of our Reduced Risk Products (RRPs), an external consultant worked with our EHS department to develop LCAs around RRPs to understand the impacts these have on our carbon footprint. Plans have been implemented in product development, manufacturing, distribution and rest of the value chain to mitigate these impacts. The internal costs associated with these actions are estimated at \$1 - 2M. In addition, our robust environmental management systems and science based climate-related targets help prepare us for this.</p>
Reputation	Relevant, always included	<p>Stakeholder interest in climate change adaptation is increasing as the effects of climate change become more apparent. PMI strives to actively manage its reputation through corporate sustainability and climate change strategy, programs and transparent communications including our website, our UN Global Compact Communication on Progress in 2016 and in our sustainability report since 2017, CDP disclosure, new products LCA (e.g. our RRPs) and packaging developments. In addition, PMI's Board of Directors believes that environmental, social, and governance (ESG) factors relevant to the company's business are important to PMI's long-term success. The Board's sustainability oversight was more formally established at the beginning of 2018 when its Nominating and Corporate Governance Committee was given the mandate to oversee the company's sustainability strategy and performance, and to advise the Board on sustainability matters. Part of the Board's oversight is a focus on management's efforts to enhance shareholder value responsibly and sustainably. Demand for proof of sustainability claims, such as LCA data and environmental product labels has the potential to grow. We are also looking at initiatives – including strengthening our product LCA – that can help us build closer cooperation within our value chain to help our stakeholders understand environmental impacts of different packaging alternatives. We undertook LCA projects, including revisiting elements of our carbon footprint assessment as a cost of approximately \$100k in 2015 that resulted in a more accurate baseline and model in 2016. Due to the ramping up of our Reduced Risk Products (RRPs), an external consultant worked with our EHS department to develop LCAs around RRPs to understand the impacts on our carbon footprint. Plans have been implemented in product development, manufacturing, distribution and the rest of the value chain to mitigate these impacts. The internal costs associated with these actions are</p>

	Relevance & inclusion	Please explain
		<p>estimated at \$1-2 M. In addition, our robust environmental management systems and science based climate-related targets help prepare us for this. An example is deforestation risk in specialty papers for cigarette production which has a very limited offer of certified materials or the lack of mature market for certified firewood.</p>
Acute physical	Relevant, always included	<p>Extreme weather events due to climate change have the potential to significantly impact our operations, buildings and suppliers. Flooding or typhoons can damage our buildings and goods, as well as the crops of our farmers and our logistics networks. In 2015, PMI performed a comprehensive Climate Change Risk Assessment for corporate and asset level physical risks and opportunities up to 2025-2030. The process included key assets such as factories/warehouses, supplier assets (including ports, warehouses, tobacco growing regions and suppliers). For instance, some of the risks identified are the threat of flooding in the Netherlands and cyclones in the Philippines that could cause damage in our manufacturing and warehouse sites estimated at \$10-20M for each location according to our insurer estimation. This information is reviewed regularly with top management; it enables risk/opportunity identification and management at the company and asset level, and includes regulatory climate change aspects and geopolitical risk. Our substantial tobacco leaf inventories can help mitigate short term impacts. In addition, we regularly review promising tobacco leaf and clove growing areas and assess if climate change elements could favor increased yield. We are also actively researching drought tolerant seed varieties. More globally, we implement Good Agricultural Practices (GAP), a comprehensive program that include mandatory requirements for our tobacco. and promotes practices that militate impacts of extreme weather. In 2017, we released our Responsible Sourcing Principles (RSP) and Implementation Guidelines, which established the foundation for a more comprehensive and systematic approach to addressing supply chain sustainability beyond our agricultural supply chain. Extreme weather events did not significantly impact PMI operations, buildings and supply chain in 2017.</p>
Chronic physical	Relevant, always included	<p>Longer term weather shifts due to climate change have the potential to significantly impact our operations, buildings and suppliers. For instance, rising sea levels due to climate change may impact some of our facilities in the Netherlands and some Asian countries, and tobacco growing areas near coasts. In 2015, PMI performed a comprehensive Climate Change Risk Assessment (CCRA) for corporate and asset level physical risks and opportunities up to 2025-2030. The process included key assets such as factories/warehouses, and supplier assets (including ports, warehouses, tobacco growing regions and suppliers). This information is reviewed regularly with top management, it enables risk/opportunity identification and management at the company and asset level, and includes regulatory climate change aspects and geopolitical risk. Our agricultural supply chain is widely spread around the world, which helps to mitigate the potential impacts from longer term weather shifts due to climate change. In addition, we continually review promising tobacco leaf and clove growing areas and assess if climate change elements could favor increased yield. We are also actively researching drought tolerant seed varieties from 2015. We implement Good Agricultural Practices (GAP), a comprehensive program that include mandatory requirements for our tobacco suppliers and is coordinated by PMI Leaf Department who provides specific guidance on initiatives to mitigate tobacco growing impacts on climate change such as improving curing barns efficiency and consequently reducing GHG emissions. Cost to improve curing barn efficiency ranges from few hundred dollars per barn to a thousand; overall carbon reduction programs for tobacco supply chain cost us around \$3 M per year. In 2017, we released our Responsible Sourcing Principles (RSP) and Implementation Guidelines, which establish the foundation</p>

	Relevance & inclusion	Please explain
		for a more comprehensive and systematic approach to addressing supply chain sustainability beyond our agricultural supply chain, including climate change.
Upstream	Relevant, always included	<p>When we conduct our risk assessments we look broadly at our value chain. Using this approach, we have identified a number of risks in our value chain and are actively working to mitigate them through proactive management. We are also looking at initiatives – including strengthening our product LCA – that can help us build closer cooperation within our value chain to help our stakeholders understand environmental impacts of our products. We revisited elements of our carbon footprint assessment as a cost of approximately \$100k in 2015 that resulted in a more accurate baseline and model in 2016. Due to the ramping up of our Reduced Risk Products (RRPs), an external consultant worked with our EHS department to develop LCAs around RRP to understand the impacts these have on our carbon footprint. Plans have been implemented in product development, manufacturing, distribution and rest of the value chain to mitigate these impacts. We source agricultural commodities, such as tobacco leaf and clove whose yield and quality are strongly influenced by changes in temperature, precipitation and cyclones. Our agricultural supply chain is widely spread around the world to mitigate climate related risks. In addition, we regularly review promising tobacco leaf and clove growing areas and assess if climate change elements could favor increased yield. We are also actively researching drought tolerant seed varieties. More globally, we implement Good Agricultural Practices (GAP), a comprehensive program that include contractual requirements for our tobacco and promotes practices that mitigate impacts of extreme weather. In 2017, we released our Responsible Sourcing Principles (RSP) and Implementation Guidelines, which established the foundation for a more comprehensive and systematic approach to addressing supply chain sustainability beyond our agricultural supply chain, in 2015, PMI performed a comprehensive Climate Change Risk Assessment (CCRA) for corporate and asset level physical risks and opportunities up to 2025-2030. The process included key assets such including upstream supplier assets (ports, warehouses, tobacco growing regions and suppliers). This information is reviewed regularly with top management, it enables risk/opportunity identification and management at the company and asset level; includes regulatory climate change aspects and geopolitical risk.</p>
Downstream	Relevant, always included	<p>When we conduct our risk assessments, we look broadly at our value chain. Using this approach, we have identified a number of risks in our value chain and are actively working to mitigate them through proactive management. Examples of these risks are key assets risks affecting downstream supplier assets like ports or warehouses. We are also looking at initiatives – including strengthening our product LCA – that can help us build closer cooperation within our value chain to help our stakeholders understand environmental impacts of our products. We revisited elements of our carbon footprint assessment as a cost of approximately \$100k in 2015 that resulted in a more accurate baseline and model in 2016. Due to the ramping up of our Reduced Risk Products (RRPs), an external consultant worked with our EHS department to develop LCAs around RRP to understand the impacts these have on our carbon footprint. Plans have been implemented in product development, manufacturing, distribution and rest of the value chain to mitigate these impacts. From the more than 350,000 farmers from which we source tobacco, right up to the approximately 150 million consumers of PMI products, we have an important impact on the communities and the environment around us, which we are committed to address. Through life-cycle and other assessments along our value chain we understand our main areas of impact and therefore where to set priorities. These areas include</p>

	Relevance & inclusion	Please explain
		tobacco farming for carbon footprint reduction and water stewardship action and product end-of-use for action on litter and waste. For instance, litter from cigarette butts and packaging is an issue that comes under regular public scrutiny that also affects our brand reputation. In many of our markets, such as the Philippines, Japan and Switzerland, PMI actively supports programs and campaigns for responsible litter disposal.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

Effective environmental management across our operations and value chain goes beyond compliance with applicable regulations. We follow a two-pronged approach: minimize our environmental impact through carbon footprint, waste and water use reduction, as well as conserving biodiversity and combating deforestation; and understanding and adapting to potential future business impacts of major environmental trends, such as the impact of climate change on tobacco growing.

The main elements developed to mitigate the climate change risks are :

- Regularly conduct Climate Change Risk Assessment to ensure proper understanding of the impact of PMI business (leaf growing areas, manufacturing sites, distribution centers, harbors, sea transportation routes)
- Strengthen Sustainability effort to minimize PMI's impact on climate change via numerous strategic initiatives to reduce our carbon footprint (see section C3.1c) and manage sustainably water resources.
- Explore opportunities to spread sourcing of materials geographically and robust business continuity programs to ensure continued supply of materials and production.

The mitigation plans are verified by three assurance functions (Corporate Audit, Internal Controls and Ethics & Compliance) and Compliance Local Programs Owners.

Risk-centric and top-down approach and focused on risks actionable by the 3 assurance functions (Corporate Audit, Internal Controls and Ethics & Compliance) and Compliance Local Program Owners. It is divided in 4 phases: 1)

Global/Regional/Local Risks identification taking into consideration the PMI 22 Strategic Risks, Key Global Projects and Ethics & Compliance Risk Briefs, 2) Risk Calibration, 3) Top-down & Bottom-up Action Plan Alignment (Top-down definition of local risk assurance activities deriving from global risks/initiatives; Bottom-up assessment as a 2nd step, mainly focusing on local risks), 4) Presentation of the IRA results to the Corporate Risk Governance Committee (CRGC) as well as the Local and Regional Management and Global Function Heads. The same process is used to manage climate-related opportunities.

PMI conducted a comprehensive CCRA for physical and regulatory risks and opportunities and geopolitical risk up to 2025-2030. The process included key assets (factories/warehouses) and supplier assets (ports, warehouses, tobacco growing regions). This information is regularly reviewed with top management and enables risk/opportunity identification and

management at the company and asset level. We also use a Marginal Abatement Cost Curve (MACC) and an internal carbon price (USD 17 per ton CO2e) to prioritize GHG reduction projects. For instance, we installed 3 high-efficiency energy efficient tri-generation power plants coupled with solar photovoltaic energy generation in Indonesia and Turkey in 2017. Through life-cycle and other assessments along our value chain we understand our main areas of impact and therefore where to set priorities. These areas include tobacco farming for GHG reductions and water stewardship action, and product end-of-use for action on litter and waste. In 2017, we released our Responsible Sourcing Principles (RSP) and Implementation Guidelines, which established the foundation for a more comprehensive and systematic approach to addressing supply chain sustainability beyond our agricultural supply chain. In the area of climate change, our RSP encourages suppliers review, identify and minimize their environmental impacts, especially regarding land use, waste, emissions, energy and water consumption. We have similar requirements to our agricultural supply chain through our Good Agricultural Practices (GAP). The implementation of GAP and strategic initiatives to reduce carbon footprint in our supply chain such as upgrading tobacco barns to increase curing efficiency or replacing fossil fuels with biomass as curing fuel sources requires a collaboration with PMI Leaf suppliers; this close collaboration is an opportunity to strengthen our working relationship, and foster additional collaboration not only climate change related risks, but also in other areas that may have a positive impact on our business and share value with society. The final outcome of this opportunity is that PMI will be able to build a stronger and more resilient value chain and that it will be capable of positioning itself as a leading company collaborating with its Leaf suppliers to implement actions that contribute to a more sustainable future.

We have an extensive risk control program whereby locations with values exceeding \$30 million are surveyed by engineers from our property insurer, FM Global. The program is based on a Highly Protected Risk (HPR). Recommendations for risk improvement are generated by the insurer risk engineer if the expected risk reduction exceeds the cost to comply (10+ factor) . Recommendations with a loss expectancy of \$10 million impact the HPR rating.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact driver

Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

Our operations throughout the globe are subject to various climate-related regulations. There is a clear international trend towards increasing and stricter climate-related regulations which could increase our operational costs. These include, but are not limited to: (i) CO2 related trading schemes such as the EU Emission Trading Scheme (EU ETS). PMI owned and operated 3 factories in Germany, Netherlands and Italy covered by the EU ETS, with total verified emissions of over 70,000 metric tonnes of CO2 in 2017. PMI has other factories in the EU and EU accession countries which could also become subject to EU ETS. Although the cost of EU ETS carbon credits have been lower in the past several years due to a large surplus of allowances, the cost of allowances is expected to increase due to stricter regulations and more significant long-term reforms to reduce oversupply. According to the European Commission "Manufacturing industry received 80% of its allowances for free in 2013. This proportion will decrease gradually year-on-year, down to 30% in 2020". Thus increasing our operating costs of purchasing allowances in the future. In addition to EU ETS, other countries and regions are considering and, in some cases, developing similar programs, compatible with EU ETS, in an effort to form a global carbon market. Tighter regulations in this area could indirectly influence our supply chain with regard to energy supply, and increase in electricity prices. As an example, our sites in South Africa and Canada could be subject to future cap and trade schemes. Whereas the former is still under discussion, the later seems to be set at "\$10 per tonne in 2018 and rise by \$10 a year to reach \$50 per tonne in 2022" according to the government of Canada. (ii) Electricity, fuel and CO2-related levies or taxes such as the climate change levy in the UK and the CO2 tax in Switzerland. (iii) General environmental regulations, including facility design, emissions limits and permitting. An example is the EU Energy Efficiency Directive which impact the design of new facilities. (iv) Emissions reporting obligations. In various countries around the world we are subject to electricity and fuel related reporting obligations such as the National GHG and Energy Reporting Requirements in Australia and new tax code related to regulations in Ukraine and Germany.

Time horizon

Current

Likelihood

Likely

Magnitude of impact

Low

Potential financial impact

150000

Explanation of financial impact

Although the cost of EU ETS carbon credits have been lower in the past several years due to a large surplus of allowances, the cost of allowances is expected to increase due to stricter regulations and more significant long-term reforms to reduce oversupply. According to the European Commission the "manufacturing industry received 80% of its allowances for free in 2013. This proportion will decrease gradually year-on-year, down to 30% in 2020". Thus increasing our operating costs of purchasing allowances in the future. We estimate the potential financial impact to be around \$150k based on (i) Only 3 EU ETS factories in 2017, annual cost of emissions allowances is expected to be up to \$50K short term. We will likely onboard new sites into EU ETS during 2018 due to the higher energy RRP production requirements. For Canada, in case the system is put in place as announced and reaches \$50/tonne in 2022, annual cost \$100k

Management method

We manage these risks through our comprehensive Energy Management Program and CO2 reduction targets (US\$10M already invested and \$200k/year management cost), which can provide the basis for carbon tax exemptions (e.g. our Swiss affiliate is already exempted due to its energy reduction results) and "cost to comply" reductions with the EU ETS. Design standards for our new facilities include low GHG building practices (e.g. low GHG building materials and energy efficient lighting), minimize our risk exposure. Drivers like EU ETS and Energy Efficiency Directive have led us to consider process changes (e.g. replacement of older combustion equipment to more efficient equipment can potentially reduce our energy load to below the 20MW regulatory threshold). Wider best practice sharing and individual energy/GHG saving projects involve specific investments of around \$10M/year. From 2014-2017 we were able to delist sites from EU ETS as they fell below the total combustion capacity threshold. Following our energy and CO2 reduction targets means that our Russia factory will already meet or exceed new state regulations such as the "energy conservation and improving energy efficiency in the period up to 2020" law. We also have an energy and GHG data collection and reporting software (initial investment of \$1M and \$200k/year maintenance cost) for all our manufacturing facilities, who are trained as both data contributors and validators. System undergoes internal and external data audit

Cost of management

21400000

Comment

The costs associated are generally embedded in our Energy Management Program, with around US\$10M already invested specifically in energy monitoring and targeting and an associated \$200k per year management cost. The wider best practice sharing approach and individual energy/CO2 saving projects involve specific investments of approximately \$10M per year. Initial investment into our energy and GHG data collection software was \$1M, with ongoing operational and maintenance of \$200k per year.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact driver

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company-specific description

We purchase tobacco leaf of various types, grades and styles throughout the world, Approximately 90% of our purchases come from more than 350,000 farmers directly contracted either by us or by our third-party leaf suppliers in 28 countries. In 2017, we contracted farmers directly in several countries, including Argentina, Brazil, Colombia, Ecuador, Italy, Kazakhstan, Pakistan, the Philippines and Poland. Physical climate change risks could affect our own operations and those of our suppliers globally. For instance: (i) Changes in precipitation patterns and extreme variability in weather patterns could affect the yield, quality and availability of our important crops, such as tobacco leaves and cloves, changing our buying patterns and increasing operational costs. Increased drought/flooding could disturb the tobacco leaf life cycle stages. Extreme rainfall may require pumping of excess water; similarly, extreme droughts could require long-term irrigation, both of which increase energy consumption, and the tobacco production cost. Clove yields are complex and weather sensitive. It takes at least 5-7 and 20-40 years for clove trees to become productive and reach peak production, respectively; with harvests varying by up to 60% over a 4 year cycle. This could also affect the transportation of our raw materials and goods in our supply chain and interrupt the operations of ports. Extreme rainfall could cause damage to buildings and our goods which would increase our management costs and insurance fees. (ii) Rising mean temperatures could also impact the quality and yield of the crops we use. While a slight increase in average temperature can lengthen the tobacco growing season in some regions and therefore increase yield. It can also adversely impact the yield and quality of the crop in drought-prone areas and increase the need for

crop irrigation. This would also lead to an increase in the use of cooling or heating systems, increasing our energy demand, thus impacting our energy consumption.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Potential financial impact

100000000

Explanation of financial impact

The financial implications of these risks vary depending on the asset that is impacted. For instance, the threat of flooding in the Netherlands and cyclones in the Philippines could cause damage in our manufacturing and warehouse sites estimated at \$10-20M for each location according to our insurer estimations. Besides, damage to raw materials and finished goods could escalate to around \$100M but that is considered very unlikely. In an extreme case where simultaneous crop failures or tobacco shortages occur the potential implications are around \$100M; such a situation is very unlikely. In 2017, despite being the third warmest year ever recorded according to NASA, no significant issues can be reported.

Management method

PMI's operations and supply chain are globally spread mitigating the effects of severe catastrophic climatic disruption. PMI's business continuity management plans are designed to mitigate the consequence of supply chain interruption and disruption. Other tools we use in identifying significant risks from climate change to inform our long-term business planning are: climate change risk assessments (CCRAs), facility risk management (insurance assessments), environmental risk assessments (ISO14001), due diligence assessments, and Good Agricultural Practices (GAP) assessments. We have already identified our key assets at risk of climate change impacts (both PMI owned and in our entire value chain). We invested around \$200k in this global risk assessment and the main costs in 2015 were to update that with external expert support, internal time and resources estimated at \$100k. Adjustments to our procurement patterns, relocating tobacco crop growing areas and our substantial tobacco leaf inventories can help to mitigate short-term impacts. Last year we relocated some tobacco sourced from Africa to Latin America due to lack of sustainable sources for curing. Assessments on climate and water risk to leaf production will help to better understand our exposure to changes in water availability to develop a water stewardship strategy including measures to support farmers and mitigate the risk in our supply chain. We are also researching drought tolerant seed varieties

Cost of management

300000

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Reputation: Shifts in consumer preferences

Type of financial impact driver

Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

Today's consumers expect to see more sustainable products that reduce negative environmental impact. Ever-increasing environmental awareness of consumers influences their product selection and buying decisions. It is widely believed that consumers will continue to place increased value on recyclability and the perceived environmental credentials of packaging - at the same time, demand for proof of sustainability claims could grow, for instance in the demand for LCA data. Raising consumer awareness is also driving the movement towards environmental product labels. Failing to adequately label products could impact our product appealing for consumers and those reduce our sales. Carbon product, packaging labels and recycling symbols are starting to be required by regulators. Overall, these could increase our operating costs. This cost could be however offset by an increased demand of environmental labeled products, enabling brand differentiation, and PMI environmental commitment could then play an increasing role.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Medium-low

Potential financial impact

250000

Explanation of financial impact

Environmental reputation may become a more significant factor in our customers' purchasing decisions in the future, but at this time, we do not see this risk as significant short-term. We are also aware that regulatory and reputational risk may impact the decisions of our stakeholders, specifically our consumers and shareholders. If these risks were to materialize then they could impact our business by several millions of dollars. Short-term we see more likely the possibility of product environmental labels be required for our future products. Considering we were required to communicate environmental information we would need to develop 5 group categories ISO-compliant LCAs with a cost approximately \$50k each that would amount to a total of \$250K, excluding additional manufacturing costs associated with labeling. Currently no global product labeling standards that could coherently be applied to tobacco products.

Management method

We manage this through corporate sustainability and climate change strategy, programs and transparent communications including our website, our sustainability report, CDP disclosure, carbon footprinting of new products (e.g. RRP) and packaging developments. We are also looking at initiatives – including strengthening our product LCA – that can help us build closer cooperation within our value chain to help our stakeholders understand environmental impacts of different packaging alternatives. In 2017-2018 we undertook a complete review of our carbon footprint modeling with an external consultants to include more primary data from our suppliers, provide better forecasting capabilities and consider the impact of our new RRP products with a cost of approximately \$100k. The model provides a more accurate baseline and allows to better provide ownership to departments that can track their progress in terms of carbon reductions. An external consultant worked with our EHS department to develop LCAs around RRP developments to understand the impacts these have on our carbon footprint. Plans have been implemented in product development (e.g. eco-design in stage gate process), manufacturing, distribution and rest of the value chain to mitigate these impacts. The internal costs associated with these actions are estimated at \$1 - 2M. An example is our iQOS starter kit that was fully redesigned to use biodegradable recycled board.

Cost of management

1000000

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of supportive policy incentives

Type of financial impact driver

Reduced operational costs (e.g., through use of lowest cost abatement)

Company- specific description

Compliance with country specific legislation provides PMI with the opportunity to reduce energy consumption, lower CO2 emissions, and reduce our operational costs. Such opportunities exist in the form of: i) Subsidies for renewable energy generation in different countries, which are factored into our cost-benefit analyses for pertinent projects so that improved return on investment can potentially be delivered. Cost-Benefit analyses and renewable energy assessments have been performed in Turkey, Philippines, Portugal and Poland. We also have the potential to identify and support Clean Development Mechanism (CDM) project opportunities for our tobacco leaf suppliers. ii) EU Emission Trading Scheme (ETS): Opportunities are linked to widening the EU ETS carbon trading market to include EU accession countries where PMI has facilities. Opportunities also exist in other regions (e.g. Australia, Mexico) where PMI has facilities that are considering introducing similar schemes. There is the potential to use our experience of these schemes to enable performance ahead of allocated emissions and generate carbon credits. Starting from 2 EU affiliates which were in the EU ETS in 2015 (Netherlands and Portugal, which were de-listed in 2016 as they moved below the total combustion capacity threshold), there is the potential to trade internally with other PMI affiliates and generate energy and CO2 savings. iii) Energy taxes, such as in Germany, which encouraged PMI to implement an Energy Management Program to ISO 50001 that will allow us to reduce energy tax costs. Also, our Switzerland affiliate obtained CO2 tax exemptions due to energy saving programs in place within PMI. iv) Energy Efficiency Directive – promoting energy reduction at source (all EU factories) and reviewing the potential for combined heat and power. v) Incentives & Infrastructure/Buildings upgrade – for renewable energy and buildings upgrade. vii) Energy Labeling Directive – for PMI's conventional products and potential future Reduced-Risk Products (which can have related electronic components).

Time horizon

Current

Likelihood

Likely

Magnitude of impact

Low

Potential financial impact

2800000

Explanation of financial impact

We estimate the overall impact of subsidies for renewable energy generation to our various locations throughout the globe to be over \$1M based on the incentives considered in the renewable projects planned. We estimate the expansion of the EU ETS is estimated at up to \$1M based on current financial exposure in the EU and potential future inclusion of larger manufacturing centers such as in Romania or Greece. We estimate the impact of energy taxes to be around \$800k energy tax reduction in Germany based on ISO 50001 certification.

Strategy to realize opportunity

We track this through our Energy Management Program and regulatory radar screen. Specifically we have deployed energy monitoring and targeting software in our facilities so that energy intensities are understood by process and best practices can be shared. This means that the lessons learned at regulated facilities can be readily applied in other locations. In 2016/17 a special focus was created to establish benchmarks for our utilities performance and to enact programs to upgrade low performing systems in the next 3 years. Training is other pillar that has been reviewed and regional coordinators have been sent to a learning factory training program that is now being replicated at every factory to refresh basic strategies for saving energy (performance tracking, pinch analysis, theoretical limit analysis, baseload reduction, etc.). There is no incremental cost associated with the Energy Management Program as we are already implementing it for energy reduction purposes. However, the cost of this program is over \$90M from 2010-2017. The energy monitoring and targeting software also required installation of meters and has cost \$10M overall with \$200k spent in 2017 on software maintenance and upgrades. The cost for ISO 50001 development and certification is estimated to be no more than \$50k per location.

Cost to realize opportunity

90000000

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Supply Chain

Opportunity type

Resilience

Primary climate-related opportunity driver

Other

Type of financial impact driver

Increased reliability of supply chain and ability to operate under various conditions

Company- specific description

Change in mean precipitation could also impact the quality and yield of the crops we use. Tobacco leaf and cloves, some of our essential raw materials, are strongly influenced by physical climate change such as changes in precipitation. PMI sources tobacco from around 28 countries across the world. Increased precipitation could impact the tobacco leaf life cycle stages. Water short leaf growing areas could benefit from increases in precipitation (i.e. level, timing and variability) due to increases in soil moisture. This could positively impact the tobacco crop patterns, crop production capacity and quality. Continuous, year round, production could become more applicable. Currently, it takes at least 5-7 years for clove trees to become productive and 20-40 years before they reach peak production. Yields are complex and harvests can vary by up to 60% over a 4 year harvest cycle. Steady rainfall could provide steady wet season for clove growing areas increasing clove production volumes and improving crop quality. Meanwhile, change in mean temperatures may impact tobacco curing, which is an important step in tobacco production. Around 5 metric tonnes of wood is needed to cure a tonne of flue-cured tobacco. Due to potential physical climate changes, such as an increase in temperature, the quantity of energy (firewood) required to cure tobacco may decrease due to a lower temperature delta between the inside and outside of the barn, and other energy sources (such as renewable technologies) could become more cost effective.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Potential financial impact

4000000

Explanation of financial impact

We estimate increased tobacco yields can provide up to \$10 M in terms of cost savings based on the overall yield improvements recorded in the last few years. Besides, there is a financial benefit for tobacco farmers in terms of reduced fuel

wood costs that can be up to \$1 M per year according to our knowledge around tobacco curing costs and reductions in fuel used per kilogram in the past years. This although will not benefit directly to PMI will improve our farmers long term sustainability.

Strategy to realize opportunity

CCRA provides data about promising tobacco leaf and clove growing areas and assess if climate change elements could favor increased yield. Through collaboration with Profigen, a 60% PMI owned company producing tobacco seed varieties, has developed a portfolio of tobacco varieties more resilient to climate change (floods and drought). As a result of this research, in 2017 one seed variety (PVH2254) showed good growth recovery after drought periods. We implement GAP, a comprehensive program that includes mandatory requirements for our tobacco suppliers and is coordinated by the PMI Leaf Department, who provide specific guidance to regional agronomy teams. Curing barn improvement case studies and guidance are provided. The cost of this work is mainly internal time and resources, and is estimated at \$1M per year. As a result of GAP implementation, more than 350,000 farmers have access to guidance, to make their crops more resistant to climate change. While an increase in temperature may provide an opportunity to PMI in terms of reduced energy need, we are focusing programs to increase the efficiency of our curing barns. In 2017 we helped our tobacco suppliers finance efficiency improvements for 23,000 curing barns, generating an estimated saving of the equivalent of more than 1 million trees. Barn efficiency improvement costs are a few hundred dollars per barn and overall carbon reduction program runs up to \$3M per year.

Cost to realize opportunity

11000000

Comment

PMI owns 60% of Profigen, a company producing and commercializing tobacco seed varieties. Profigen has developed a portfolio of tobacco varieties more resilient to climate change, that is expected to impacts rainfall regimes, increasing the occurrence of drought periods and floods. In 2017, Profigen advanced the development of 2 varieties of seed with greater flood tolerance to be tested in Argentina. Research studies continue in collaboration between Profigen and PMI Science & Innovation Research and Development center in Switzerland for the selection of plants with the ability to stand hard weather conditions. As a result of this research, one seed variety (PVH2254) showed good growth recovery after drought periods

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Type of financial impact driver

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company- specific description

Consumers are increasingly interested in climate change and sustainability aspects of products and many of our trade customers reflect that interest. We expect that by tackling sustainability and climate change issues appropriately, our company reputation could be enhanced. Opportunities for PMI include the following: i) Appropriate product labeling of sustainability performance for PMI's customers and consumers. Displaying such sustainability performance on our products could enhance the differentiation of PMI's brands and increase the company's competitive advantage. Furthermore, trends in eco products increase the demand for, and availability of, new environmentally sustainable materials, or new usage of existing materials. An example of this in PMI tobacco supply chain includes the use of rice husk briquettes as fuel for tobacco curing in the Philippines, and nut kernels as fuel in Indonesia. ii) Environmental information for our key accounts/retailers, to meet their growing interest in sustainability practices. iii) Supply Chain engagement. Leading performance in these areas could attract new investors and also increase our attractiveness as an employer.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

High

Potential financial impact

144000000

Explanation of financial impact

It has been estimated among FMCG sector that successful product developments could generate sales increase up to 0.5%. This will represent a benefit in terms of gross profit of over \$144M,

Strategy to realize opportunity

The internal costs associated with these actions are estimated at \$ 2-5M. We realize this opportunity through: i.) Our corporate sustainability and climate change strategy, programs and communications including our Corporate Sustainability Report, our website, social media and this CDP disclosure. ii) Our consumer insights research helps us understand the potential market for eco-product developments. iii) To meet the growing interest of our key accounts/retailers in sustainability

practices, we continue to increase our emphasis on our products' LCA within our value chain and provide company information on our sustainability performance. This includes determining the carbon footprint of new products (e.g. IQOS and other RRP's Life Cycle Assessments). iv) We are working toward strengthening our product LCA process to help us build closer cooperation within our supply chain and help our partners to understand the upstream environmental impacts of different material alternatives (e.g. for packaging components) and the direction PMI is taking in product developments. At PMI, we closely follow consumer and market sustainability trends and engage with our suppliers on the development of new materials to be in line with these growing trends. v) Appropriate product labeling of sustainability performance for PMI's customers is the outcome of a rigorous verified product LCA of PMI's products to identify their lifecycle CO2 emissions performance.

Cost to realize opportunity

2000000

Comment

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Not yet impacted	Environmental reputation may become a more significant factor in our customers' purchasing decisions in the future, this affecting our sales. At this time, we do not see this risk as significant. In the short-term (3-6 years), we estimate the potential financial opportunity of shifting consumer preferences toward more environmentally-friendly products and successful product developments could provide benefits of over several millions. We expect the magnitude of impact to our direct operations to be medium-low. We are looking into initiatives that can help us build closer cooperation within our value chain to help set the direction PMI is taking in product development and help our stakeholders understand environmental impacts of our products. Our consumer insights research helps us understand the potential market for eco-product developments. We also closely follow consumer and market sustainability trends and engage with our suppliers on the development of new materials to be in line with these growing trends. This includes conducting carbon footprint assessments of new products (e.g. new smoke-free products) and strengthening our product lifecycle assessments (LCA), especially around the upstream environmental impacts of different material alternatives (e.g. for packaging components). In 2016, due to the ramping up of our Reduced Risk Products (RRPs), an external consultant worked with our EHS department to develop LCAs around RRP's to understand the impacts these have on our carbon footprint. Plans have been implemented in product development, manufacturing, distribution and rest of the value chain to mitigate these impacts. To meet the growing interest of our key accounts/retailers in sustainability practices, we continue to increase our emphasis on our products' LCA within our value chain and provide company information on our

	Impact	Description
		sustainability performance. Appropriate product labeling of sustainability performance for PMI's customers and consumers would be the outcome of a rigorous verified product LCA of PMI's products to identify their life cycle CO2 emissions performance. Currently no global product labeling standards that could coherently be applied to tobacco products, should product labeling be required for our future products, we estimate a cost of over \$250K excluding additional manufacturing costs associated with labeling.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	Physical climate change risks could affect our own operations and those of our suppliers globally. Changes in precipitation patterns and extreme variability in weather patterns could affect the yield, quality and availability of our important crops, such as tobacco leaves and cloves, changing our buying patterns and increasing operational costs. Water-short leaf growing areas could benefit from increases in precipitation due to increases in soil moisture, which could positively impact tobacco crop patterns and quality. Year-round production could become more applicable. Steady rainfall could provide a steady wet season for clove growing areas, increasing production volumes and improving quality. A slight increase in temperature may lengthen the tobacco growing season in some regions leading to a potential tobacco yield improvement estimated to over \$10M benefiting the farmers. In addition, temperature increase may also reduce the need for fuel (wood) in tobacco curing, . The financial benefit of reduced fuel costs is for tobacco farmers. On the other hand, increased drought/flooding could disturb the tobacco leaf life cycle stages from the over 28 countries we source from. Flooding may require pumping of excess water; similarly, extreme droughts may require long-term irrigation, both of which increase energy consumption and production costs. Extreme rainfall could damage our buildings and goods, increasing our management costs and insurance fees. Rising sea levels in areas near our leaf growing, manufacturing and warehouses (e.g. Netherlands and some Asian sites), could cause sourcing delays and manufacturing impacts, disrupting production volumes. This could also impact ground water, additional treatment of which could be costly and increase our energy consumption. This could also leave our farmers and employees who live in low lying areas in danger of being flooded. The financial implications of these risks vary depending on the asset that is impacted. For instance, the threat of flooding in the Netherlands and cyclones in the Philippines could cause damage to our sites estimated at \$10-20M for each location. Damage to raw materials and finished goods could escalate to around \$100M but that is considered very unlikely.
Adaptation and mitigation activities	Impacted	PMI's operations and supply chain are widely spread, mitigating the effects of severe catastrophic climatic disruption. PMI's business continuity management plans are designed to mitigate the consequence of supply chain interruption and disruption caused. Wider best practice sharing approach and individual energy/CO2 saving projects involve specific investments of approximately \$10M per year to help achieve our GHG reduction goals. Other tools we use in identifying significant risks and/or opportunities from climate change to inform our long term business planning include the following: climate change risk assessments, facility risk management (insurance assessments), environmental risk assessments (ISO14001), due diligence assessments, and Good Agricultural Practices (GAP) assessments. We have identified our key assets at risk of climate change impacts (both PMI factories/offices/warehouses owned and in our entire value chain). We invested around \$200,000 in this global risk assessment and the main costs in 2015 were to update that with external expert support, internal time and resources estimated at \$100,000. Adjustments

	Impact	Description
		to our procurement patterns, relocating tobacco crop growing areas and our substantial tobacco leaf inventories can help to mitigate short-term impacts. Findings from our assessments on climate and water risk to leaf production facilities will help better understand our exposure to changes in water availability and develop a water stewardship strategy and develop measures to support farmers and/or remove the risk from our supply chain. We are also researching drought tolerant seed varieties. Efforts to reduce emissions are related to improving curing barn efficiency, eliminating coal and non-sustainable firewood while promoting renewable sources of biomass (i.e. wood-fuels, including sustainable sources of firewood, and agro-fuels mainly waste and by-products generated by other crops). The financial implications of these risks vary depending on the asset impacted. For instance, flood threats in the Netherlands and cyclones in the Philippines could cause damage in our manufacturing and warehouse sites estimated at \$10-20M for each location. Damage to raw materials and finished goods or simultaneous crop failures or tobacco shortages could escalate each to around \$100M but both are considered very unlikely.
Investment in R&D	Impacted	Today's consumers expect to see more sustainable products that reduce environmental impacts. Ever-increasing environmental awareness of consumers influences their product selection and buying decisions. Our consumer insights research helps us understand the potential market for eco-product developments. We estimate successful product developments could provide benefits of over \$ 10M in the short-term. Our scientific assessment program, outlined in our dedicated website at www.pmiscience.com , continued to make substantial progress last year. The program is built on best practices and guidelines. We adhere to the internationally recognized Good Clinical Practices and Good Laboratory Practices. To deliver on the substantial promise of Reduced Risk Products (RRPs), we initiated fundamental changes to our operating model, organizational structure and culture in 2017 to accelerate our evolution into a consumer-centric, technology and science-driven company. Elements of our carbon footprint have been modeled using the LCA tool, Simapro. For our base year in 2010, we undertook a third party review against ISO 14040 series of standards and the draft Scope 3 Accounting and Reporting Standard as released by the WBCSD/WRI GHG Protocol Initiative. The LCA projects, including revisiting elements of our carbon footprint assessment cost of approximately \$100k in 2015. In 2016, due to the ramping up of our Reduced Risk Products (RRPs), we worked with an external consultant to develop LCAs around RRP's to understand the impacts these have on our carbon footprint. Plans have been implemented in product development, manufacturing, distribution and rest of the value chain to mitigate these impacts.
Operations	Impacted	Our operations spread throughout the globe are subject to various climate-related regulations. A clear international trend towards increasing and more strict climate-related regulations exists. Though compliance with country-specific legislation increases operating costs, it provides PMI with the opportunity to reduce energy consumption, CO2 emissions and operational costs. Such opportunities exist in the form of: i) Renewable energy generation subsidies are factored into our cost-benefit analyses to improve return on investment, estimated to be over \$1M throughout our global operations. We have performed these for Turkey, Philippines, Portugal and Poland sites. ii) CO2 related schemes such as the EU Emission Trading Scheme (EU ETS), which covers our Germany manufacturing center, with total verified emissions of over 20,000 metric tonnes of CO2 in 2016. Although the cost of EU ETS carbon credits have been lower in the

	Impact	Description
		past years due to a surplus of allowances, the cost of allowances is expected to increase due to stricter regulations and long-term reforms to reduce oversupply. Based on only 1 EU ETS factories in 2016, the annual cost of emissions allowances is expected to be up to \$50K in the short term. Expanding the EU ETS to include EU accession countries where PMI has facilities provides us with the opportunity to apply our experience in these new countries or other regions considering introducing similar schemes (e.g. Australia, Mexico). In 2016, 2 of our EU affiliates (Netherlands and Portugal) were de-listed from the EU ETS as they moved below the total combustion capacity threshold. There is the potential to trade internally with other PMI affiliates and generate energy and CO2 savings. iii) Energy taxes, such as in Germany, encouraged PMI to implement an Energy Management Program to ISO 50001, saving us an estimated \$800k in energy tax reductions. For our global operations, such levies and taxes are estimated at around \$2M iv) Energy Efficiency Directive, Incentives & Infrastructure/Buildings upgrade – promoting energy reduction at source (all EU factories), reviewing the potential for combined heat and power, promoting renewable energy and buildings upgrade. Managing tighter environmental reporting regulations in the future could cost over \$1M per year across our global facilities.
Other, please specify	We have not identified any risks or opportunities	There are no other risk or opportunities that have impacted our business.

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	Not yet impacted	Today's consumers expect to see more sustainable products that reduce environmental impact. Ever-increasing environmental awareness of consumers influences their product selection and buying decisions. Our robust environmental management systems and science based climate-related targets help prepare us for this. We, however, have not seen a significant impact of these consumer preferences on our revenues. We estimate successful product developments could provide benefits of over \$10M in the medium- to long-term. Our consumer insights research helps us understand the potential market for eco-product developments. We are subject to international, national, and local environmental regulations in the countries in which we do business. We have specific programs across our business units designed to meet applicable environmental compliance requirements and reduce our carbon footprint, waste, water, and energy consumption. We have a consistent environmental and occupational health, safety and security management system (EHSS) at all of our manufacturing centers. We also conduct regular safety assessments at our offices, warehouses and car fleet organizations. We also have an external certification body to validate the effectiveness of our EHSS management system at our manufacturing centers around the world, in accordance with internationally recognized standards. Our subsidiaries

	Relevance	Description
		expect to continue to make investments in order to drive improved performance and maintain compliance with environmental regulations. We assess and report the compliance status of all our legal entities on a regular basis. Based on the management and controls we have in place and our review of climate change risks, risks and opportunities related to climate change have not had, and are not expected to have, a material adverse effect on our consolidated results of earnings or competitive position.
Operating costs	Impacted for some suppliers, facilities, or product lines	We have a consistent environmental and occupational health, safety and security management system at all our manufacturing centers. Based on the systems we have in place and our review of climate change risks, environmental expenditures have not had, and are not expected to have, a material adverse effect on financial statements. Our operations spread throughout the globe are subject to various climate-related regulations. Our Energy Management Program and regulatory radar screen helps reduce compliance costs and reduce energy use, CO2 emissions, and operational costs. We incorporate these in our financial planning processes through: i) Renewable energy generation subsidies are factored into our cost-benefit analyses estimated to be over \$1M throughout our global operations. We have performed these for our Turkey, Philippines, Portugal and Poland sites. ii) CO2 related schemes such as the EU Emission Trading Scheme (EU ETS), which covers our Germany manufacturing center. Cost of allowances is expected to increase due to stricter regulations and long-term reforms to reduce oversupply. Based on only 1 PMI EU ETS factory in 2016, the annual cost of emissions allowances is expected to be up to \$50K in the short term. In 2016, 2 of our EU affiliates (Netherlands and Portugal) were de-listed from the EU ETS as they moved below the total combustion capacity threshold), there is the potential to trade internally with other PMI affiliates. iii) Energy taxes, such as in Germany, encouraged PMI to implement an Energy Management Program to ISO 50001, saving us an estimated \$800k in energy taxes. Such taxes are estimated at around \$2M for our global operations. iv) Regarding sourcing our important raw materials, we continually review promising tobacco leaf and clove growing areas and assess if climate change elements could favor increased yield. We are also actively researched drought tolerant seed varieties since 2015. We implement Good Agricultural Practices (GAP), a comprehensive program that include mandatory requirements for our tobacco suppliers and is coordinated by the PMI Leaf Department who provide specific guidance on implementation to regional agronomy teams. Curing barn improvement guidance is provided. Barn efficiency improvement costs can be a few hundred dollars per barn but overall carbon improvement programs for farmers run to approximately \$3M per year
Capital expenditures / capital allocation	Impacted	We are continuing our Marginal Abatement Cost Curve (MACC) approach to identify where to act by comparing and ranking all our GHG reduction projects globally based on their cost-effectiveness in reducing emissions. We have also set an internal carbon price (USD 17 per ton CO2e), necessary to drive the investments needed. On a day-to-day basis we use MACC to refresh and enhance our list of initiatives. As an example, in 2017 we installed three high-efficiency tri-generation power plants – systems which generate heat, cold, and power in one efficient combined process – coupled with solar photovoltaic energy generation in Indonesia and Turkey. As an example of financial impact is the specific investments

	Relevance	Description
		of around \$10M/year in our energy management program or the around \$200K/year in maintaining our global energy metering and targeting system.
Acquisitions and divestments	Not impacted	Our subsidiaries expect to continue to make investments in order to drive improved performance and maintain compliance with environmental laws and regulations. We assess and report the compliance status of all our legal entities on a regular basis. Based on the management and controls we have in place and our review of climate change risks (both physical and regulatory), risks and opportunities related to climate change have not had, and are not expected to have, a material adverse effect on our consolidated results of operations, capital expenditures, financial position, earnings or competitive position. Therefore these factors do not impact our acquisition and divestment planning.
Access to capital	Not yet impacted	Stakeholder interest in climate change adaptation is increasing as the effects of climate change become more apparent. PMI strives to actively manage its reputation through corporate sustainability and climate change strategy, programs and transparent communications including our website, our sustainability report, CDP disclosure, new products LCA (e.g. smoke-free products) and packaging developments. In addition, PMI's Board of Directors believes that environmental, social, and governance (ESG) factors relevant to the company's business are important to PMI's long-term success. The Board's sustainability oversight was more formally established at the beginning of 2018 when its Nominating and Corporate Governance Committee was given the mandate to oversee the sustainability strategy and performance, and to advise the Board on sustainability matters. Part of the Board's oversight is a focus on management's efforts to enhance shareholder value responsibly and sustainably. PMI has robust ESG commitments and monitors investors and shareholders interest in this area, as shown by our commitment to CDP; however, we currently do not expect risk and opportunities to impact PMI's access to capital significantly in the short term.
Assets	Impacted	In 2015, PMI performed a comprehensive Climate change risk assessment (CCRA) for corporate and asset level physical risks and opportunities up to 2025-2030. The process included key assets such as factories/warehouses, supplier assets (including ports, warehouses, tobacco growing regions and suppliers). This information is reviewed with top management; it enables risk/opportunity identification and management at the company and asset level; includes regulatory climate change aspects and geopolitical risk. We have an extensive risk control program whereby locations with values exceeding \$30 million are surveyed by engineers from our property insurer, FM Global. We have a number of locations that do have flood exposures, however this is addressed through recommendations to protect openings, raise equipment, and implement Flood Emergency Response Plans. Currently, I do not believe we have more than 2 or 3 flood related recommendations worldwide. The risk control program is based on the concept of a Highly Protected Risk (HPR). We do not have "hard and fast" rules for risk ranking but the following general approach is followed. Recommendations for risk improvement are generated by the insurer risk engineer if the expected risk reduction exceeds the cost to comply (roughly by a factor of 10 or more). Recommendations with a loss expectancy of \$10 million impact the HPR rating. Internally, we focus on recommendations above the \$50 million range as this can often be a long process involving

	Relevance	Description
		substantial capital investment and disruption to operations. The process is as follows: Site survey conducted by FM Global → Report issued to Risk Management → Recommendations reviewed and commented by Risk Management, transmitted to Operations (site top management) → Site evaluation of technical requirements, costs, budgets and creation action plan → Action plan provided to Risk Management → Risk Management follows up with Operations as needed, shares plan with Insurers → Repeat
Liabilities	Not impacted	Based on the management and controls we have in place (e.g. Site surveys performed as part of our risk control program by our insurer FM Global) and our review of climate change risks (both physical and regulatory), risks and opportunities related to climate change have not had, and are not expected to have, a material adverse effect on our liabilities.
Other	We have not identified any risks or opportunities	There are no other risk or opportunities that have impacted our business and have influenced our financial planning process.

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b)

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

I. Business objectives and strategy influenced by climate-related issues

For PMI, sustainability means creating long-term value while minimizing the negative externalities associated with our products, operations and value chain. From the more than 350,000 farmers from which we source tobacco right up to the approximately 150 million consumers of PMI products, we have an important impact on the communities and the environment around us, which we are committed to address. In a world with a changing climate, respecting the environment is something all our employees and partners can get behind. We buy approximately 350,000 to 400,000 metric tons of tobacco annually and operate 46 production facilities, and we have to be mindful of our impact on the environment. Minimizing this impact is a top priority for us through carbon-footprint reduction and it is therefore embedded in our overall business strategy, our Guidebook for Success (Code of Conduct) and our Responsible Sourcing Principles. It is integrated into normal business activities and forms part of our annual Long Range Planning process which reviews and sets business direction. In 2017, the strategy was developed/reviewed based on prior year performance, sustainability commitments and objectives, regulatory/external developments, risk/opportunity assessments, stakeholder interest and business changes. Our strategy is split into minimizing our impact on the environment through GHG reduction initiatives (mitigation), and minimizing future environmental impacts on our business through a climate change risk assessment process (adaptation).

Although we/the tobacco industry has been excluded from the UN Global Compact, we still follow its principles. We are also part of the World Business Council for Sustainable Development (WBCSD) and WeMeanBusiness coalition. Since our participation to the UNFCCC COP21 in Paris and our support to the Paris Agreement, we have continued to engage and demonstrate our commitments to climate change adaptation and mitigation, for instance through the development and approval of our science-based targets.

II. Business strategy linked to an emissions reductions target & how this gives us a strategic advantage

We have ambitious targets to reduce emissions, including a long-term commitment to science-based, climate-related targets. We surpassed our 20% reduction target, achieving 24% lower fossil-fuel-related emissions from manufacturing operations by 2016. Now we're targeting a 30% reduction in our GHG footprint across our whole value chain by 2020. Our climate change strategy has a key role in enabling our business efficiency which keeps us ahead of our competitors and supports our long-term sustainability. We have taken steps to align with our customer expectations on climate change and continue working with trade customers, such as Tesco's Supply Chain GHG reduction strategy. In terms of our products, we have the information necessary to make decisions on potential strategic advantage by considering the environmental impacts of new products or product developments through LCA. We have implemented global capacity and footprint planning which improves our flexibility and resilience.

III. PMI's short term strategy is focused on effective risk management, emissions reduction measures and renewable

energy strategy development. Key aspects include:

- Direct materials supplier program covering sustainability sourcing.
- Engaging suppliers in various ways, including Reforestation and Good Agricultural Practices (GAP), to reduce wood use in tobacco curing, promote sustainable fuel consumption and coal use elimination. GAP is a comprehensive program that includes mandatory requirements for our tobacco growing. In 2017, we released our Responsible Sourcing Principles (RSP) and Implementation Guidelines, which established the foundation for a more comprehensive and systematic approach to addressing supply chain sustainability beyond our agricultural supply chain.
- Value chain and operations 30% emissions reduction by 2020 vs 2010 baseline.
- Energy Management Program consisting of a worldwide factory metering, Energy Saving Projects and tools for collaboration.
- 4-year green energy procurement roadmap developed with the company Ecofys.
- Central governance for on-site renewable investments, based on a Marginal Abatement Cost Curve (MACC) tool to systematically calculate our internal carbon price (USD 17 per ton CO₂e) and prioritize investments in renewable technologies.
- Lifecycle Assessments (LCAs) to understand impact from significant developments in cigarette/packaging components and new products.
- GHG footprint review every 3 years to track progress; and
- Action plans for mitigating risks highlighted in 2015's climate change risk assessment.

IV. PMI's long-term business strategy aims to further strengthen our focus on physical adaptation and meet our long-term emissions reduction targets. Highlights include:

- Approved science-based targets to reduce our value chain carbon footprint by 40% by 2030 vs 2010, and our operations' by 30% by 2030 and 60% by 2040.
- Climate change risk assessments (CCRA) to inform future management decisions in terms of agricultural impacts and forecast physical changes that may occur in certain climates and countries (adaptation focus). In 2015, we performed a comprehensive CCRA for corporate and asset level physical, regulatory and geopolitical risks and opportunities up to 2025-2030. This information is reviewed with top management; it enables risk/opportunity identification and management at the company and asset level.
- Long-term sourcing strategies: Our agricultural supply chain is widely spread around the world, which helps to mitigate climate related risks allowing to relocate tobacco crops. We continually review promising tobacco leaf and clove growing areas and assess if climate change elements could favor increased yield. We are also actively researching drought tolerant seed varieties.
- Customer and supplier sustainability strategies will be aligned with ours to ensure that our value chain progress supports

our objectives.

V. Substantial business decisions influenced:

a) Science-based emissions reduction targets and our commitment to follow UN Global Compact principles show our determination to play an active role in the sustainability agenda.

b) Allowing lower project paybacks to consider climate change impact reductions. More than \$90 M worth in sustainability projects invested since 2010.

c) Voluntary green electricity sourcing.

d) Embedding environmental sustainability in our GAP for years and in RSP released in 2017. Specifically, by 2020, we aim at: a 70% increase of tobacco curing efficiency in CO2e per kg of cured tobacco leaf vs 2010; zero coal usage for tobacco curing; no deforestation of old growth forest due to the growing and curing of tobacco we purchase.

C3.1d

(C3.1d) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios	Details
Other, please specify (RCP 8.5)	<p>In 2015 we conducted a Climate Change Risk Assessment for corporate and asset level physical risks and opportunities up to 2025-2035. The process included key assets such as factories/warehouses and supplier assets (including ports, warehouses, tobacco growing regions and suppliers). This information was reviewed with top management enabling risk/opportunity identification and management at the company and asset level; includes regulatory climate change aspects and geopolitical risk. The modeling exercise of the Climate Change Risk Assessment used projections for the 2025 -2035 timeframe, in order to prepare PMI for medium-long term major physical climate change risks and also assess opportunities for new tobacco growing areas. The exercise focused in the worst case ‘high emissions’ scenario RCP8.5. This information was sourced from the Coupled Model Inter-Comparison Project - Phase 5 (CMIP5) which fed into the Intergovernmental Panel on Climate Change (IPCC) in the 5th Assessment Report. This assessment focused on enhanced robustness of the assessment of future climate change and assessment of impacts to an updated list of 85 key PMI facilities (factories and warehouses) and supply chain nodes (ports, tobacco and clove growing areas and direct materials) in order to reflect the current make up of the company. Future scenarios were built using the following 3-step approach: 1) Climate change projections determine the percentage change from baseline in the future for the site in question 2) Sourced from the Coupled Model Inter-Comparison Project - Phase 5 (CMIP5) which fed into the Intergovernmental Panel on Climate Change (IPCC) in the 5th Assessment Report 3) Projections for the 2030 timeframe (averaged over 2025 -2035) under the worst case ‘high emissions’ scenario RCP8.5 The data pulled from this assessment included mean values from all climate models providing projections (multi-model mean) for the whole world for each scenario and time frame for temperature, precipitation and drought. Key indicators included: Drought • Dry spell duration • Soil moisture (by season) Floods • Mean annual precipitation (by season) • Annual total precipitation when daily precipitation exceeds the 95th percentile of wet day precipitation • Annual total precipitation when daily precipitation exceeds the 99th percentile of wet day precipitation • Annual maximum 1 day precipitation • Annual maximum 5-day precipitation Tropical Cyclones • Total annual frequency of tropical storms • Annual frequency of Category 4 and 5 storms • Mean lifetime maximum intensity (LMI) • Precipitation rate <200km of storm centre</p>

Climate-related scenarios	Details
	at time of LMI Temperature • Mean max temperature (by season) • Mean min temperature (by season) Some potential risks were highlighted such as increased in drought in Greece, Colombia and Philippines or increased risk of flooding in some EU factories. As a result, we decided to implement Alliance for Water Stewardship standard in our factories and developed a local water risk assessment tool for our tobacco growing areas to better understand local risks. With this information, we will focus efforts and prioritize investments in those factories where local risks have been identified.

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e) Disclose details of your organization's low-carbon transition plan.

We aim to be an industry leader in environmental sustainability and have set clear and measurable targets to improve our environmental performance. In 2010, we set ourselves the goal of reducing the carbon footprint of our value chain by 30% by 2020. Beyond 2020, we continue to work on developing company-wide emissions reduction targets based directly on climate science. We submitted in 2016 and received approval in 2017 for our 2030 and 2040 Science Base Targets based on a new baseline footprint analysis and a forecast on how industry trends and our Manufacturing, Fleet, Leaf and supply chain emission reduction programs could achieve in the mid- to long-term.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Both absolute and intensity targets

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1 +2 (market-based)

% emissions in Scope

100

% reduction from base year

30

Base year

2010

Start year

2010

Base year emissions covered by target (metric tons CO2e)

914050

Target year

2020

Is this a science-based target?

No, but we are reporting another target that is science-based

% achieved (emissions)

100

Target status

Expired

Please explain

This target covers scope 1 and 2 emissions from owned and operated buildings, factories and fleet. In 2016 we submitted this target and it was approved by the Science Based Target initiative (SBTi) in 2017. In 2017, we surpassed our target to reduce our scope 1 and 2 emissions by 30% versus our 2010 baseline. This achievement has been possible due to increased energy efficiency in our factories, on-site renewable projects, sourcing power from renewable resources and a program to reduce emissions in our vehicles fleet.

Target reference number

Abs 2

Scope

Scope 1 +2 (market-based)

% emissions in Scope

100

% reduction from base year

40

Base year

2010

Start year

2016

Base year emissions covered by target (metric tons CO2e)

914050

Target year

2030

Is this a science-based target?

Yes, this target has been approved as science-based by the Science-Based Targets initiative

% achieved (emissions)

78

Target status

Underway

Please explain

This target covers scope 1 and 2 emissions from owned and operated buildings, factories and fleet. In 2016 we submitted this target and it was approved by the Science Based Target initiative (SBTi) in 2017. In 2017 we achieved 31% reduction versus our 2010 baseline and thus 78% achieved ($31\%/40\% \times 100 = 78\%$). This achievement has been possible due to increased energy efficiency in our factories, on-site renewable investments, sourcing power from renewable resources and a program to reduce emissions in our vehicles fleet.

Target reference number

Abs 3

Scope

Scope 1 +2 (market-based)

% emissions in Scope

100

% reduction from base year

60

Base year

2010

Start year

2016

Base year emissions covered by target (metric tons CO2e)

914050

Target year

2040

Is this a science-based target?

Yes, this target has been approved as science-based by the Science-Based Targets initiative

% achieved (emissions)

52

Target status

Underway

Please explain

This target covers scope 1 and 2 emissions from owned and operated buildings, factories and fleet. In 2016 we submitted this target and it was approved by the Science Based Target initiative (SBTi) in 2017. In 2017 we achieved a 31% reduction versus our 2010 baseline and thus 52% achieved ($31\%/60\% \times 100 = 52\%$). This achievement has been possible due to increased energy efficiency in our factories, on-site renewable investments, sourcing power from renewable resources and a program to reduce emissions in our vehicles fleet.

Target reference number

Abs 4

Scope

Scope 1+2 (market-based) +3 (upstream & downstream)

% emissions in Scope

100

% reduction from base year

40

Base year

2010

Start year

2016

Base year emissions covered by target (metric tons CO2e)

7401498

Target year

2030

Is this a science-based target?

Yes, this target has been approved as science-based by the Science-Based Targets initiative

% achieved (emissions)

76

Target status

Underway

Please explain

This target covers scope 1, 2 and 3 emissions from all operations and our entire value chain. In 2016 we submitted and in 2017 got approved this target by the Science Based Target initiative (SBTi). In 2017 we achieved a 30% reduction versus our 2010 baseline and thus 61% achieved ($30\%/40\%*100=76\%$). This achievement has been possible due to progress in reducing our environmental impact across our value chain: in our factories and fleet where our carbon footprint is relatively small compared to other industries, as well as beyond the factory gates. That includes looking at both our upstream supply chain activities (currently focusing on tobacco farming and direct materials) and downstream, following our product and packaging environmental impacts to end-of-use.

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).**Target reference number**

Int 1

Scope

Other, please specify (Scope 1+2 (market) +3 (up & downstream))

% emissions in Scope

100

% reduction from baseline year

30

Metric

Other, please specify (kg CO₂e per million cigarette equivalent)

Base year

2010

Start year

2012

Normalized baseline year emissions covered by target (metric tons CO2e)

7911

Target year

2020

Is this a science-based target?

No, but we are reporting another target that is science-based

% achieved (emissions)

81

Target status

Underway

Please explain

This target covers scope 1, 2 and 3 emissions from all operations and our full value chain per million of cigarette equivalent produced. In 2017 we achieved a 24% reduction versus our 2010 baseline and thus 81% achieved ($24\%/30\% \times 100 = 81\%$).

This achievement has been possible due to progress in reducing our environmental impact across our value chain: in our factories and fleet where our carbon footprint is relatively small compared to other industries, as well as beyond the factory gates. That includes looking at both our upstream supply chain activities (currently focusing on tobacco farming and direct materials) and downstream, following our product and packaging environmental impacts to end-of-use. % change anticipated in absolute scope 1+2 and scope 3 emissions are highly dependent on 2020 production volumes and ratio between conventional cigarettes vs Reduced Risk Products, which changing continuously due to the rapid growth of RRP.

% change anticipated in absolute Scope 1+2 emissions

33

% change anticipated in absolute Scope 3 emissions

38

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.**Target**

Renewable energy consumption

KPI – Metric numerator

Electricity used in manufacturing

KPI – Metric denominator (intensity targets only)

Total electricity used in manufacturing

Base year

2010

Start year

2016

Target year

2030

KPI in baseline year

0

KPI in target year

80

% achieved in reporting year

66

Target Status

Underway

Please explain

This target covers the amount of electricity purchased from renewable sources. In 2017 we achieved 53% versus our 2010 baseline and thus 66% achieved ($53\%/80\%*100=66\%$). This achievement has been possible due to most European factories sourcing green electricity and for the first time, our factories in Mexico, Colombia and Serbia sourced from wind, solar or hydro plants. We will continue sourcing more renewable electricity as it becomes available in the countries where we operate.

Part of emissions target

This target is supporting the achievement of our broader carbon emissions targets covering scope 1, 2 and 3 targets.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	83	
To be implemented*	171	62297
Implementation commenced*	34	12397
Implemented*	71	60020
Not to be implemented	18	

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Activity type

Other, please specify (Fleet emissions reduction)

Description of activity

<Field Hidden>

Estimated annual CO2e savings (metric tonnes CO2e)

711

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

34270

Investment required (unit currency – as specified in CC0.4)

0

Payback period

1-3 years

Estimated lifetime of the initiative

3-5 years

Comment

At vehicle renewal, which is usually below 5 years, we target more fuel efficient and lower emission vehicles. Investment estimated at zero as no additional cost on average over and above buying a less efficient equivalent vehicle.

Activity type

Low-carbon energy purchase

Description of activity

Other, please specify (Green Electricity)

Estimated annual CO2e savings (metric tonnes CO2e)

28748

Scope

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

0

Investment required (unit currency – as specified in CC0.4)

80000

Payback period

>25 years

Estimated lifetime of the initiative

Ongoing

Comment

Renewable energy (certified green electricity) procurement for the majority of our EU facilities commenced in 2014 and in 2017 expanded to new countries like Colombia, Serbia, Mexico or Turkey. All certificates are available for 2017. Investment is the current additional amount paid for green electricity.

Activity type

Energy efficiency: Processes

Description of activity

Other, please specify (Global Energy Management Program)

Estimated annual CO2e savings (metric tonnes CO2e)

10306

Scope

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

3400000

Investment required (unit currency – as specified in CC0.4)

10000000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

General improvements from our Energy Management Program in stemmeries, factories and offices we own and operate over and above individual examples shown below. We have invested over \$10M, with individual projects usually averaging at a 3 year payback time.

Activity type

Energy efficiency: Processes

Description of activity

Combined heat and power

Estimated annual CO2e savings (metric tonnes CO2e)

18399

Scope

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

1823481

Investment required (unit currency – as specified in CC0.4)

8009581

Payback period

4 - 10 years

Estimated lifetime of the initiative

6-10 years

Comment

In 2017, as part of our renewable on-site program, we built tri-generation systems in two locations in Asia with with 4MW power each and solar photo-voltaic power system at as an alternative energy sources with 0.5 MW power, reducing substantially carbon emissions, energy costs and freeing power for the community around our sites.

Activity type

Low-carbon energy purchase

Description of activity

Natural Gas

Estimated annual CO2e savings (metric tonnes CO2e)

701

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

356114

Investment required (unit currency – as specified in CC0.4)

227000

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Building of a natural gas pipe connection in our site in Kazakhstan, to switch from diesel to clean natural gas in our factory's boiler house.

Activity type

Low-carbon energy installation

Description of activity

Biomass

Estimated annual CO2e savings (metric tonnes CO2e)

350

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

91000

Investment required (unit currency – as specified in CC0.4)

383000

Payback period

4 - 10 years

Estimated lifetime of the initiative

16-20 years

Comment

Replacement of natural gas boiler with a biomass boiler

Activity type

Energy efficiency: Building services

Description of activity

Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

37

Scope

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

53000

Investment required (unit currency – as specified in CC0.4)

125000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Solar tube installation to use natural lighting during day time in our factory in Mexico.

Activity type

Energy efficiency: Building fabric

Description of activity

Insulation

Estimated annual CO2e savings (metric tonnes CO2e)

170

Scope

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

33600

Investment required (unit currency – as specified in CC0.4)

12000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Isolation of heating, cooling and steam system pipes and equipment at our site in Berlin.

Activity type

Energy efficiency: Processes

Description of activity

Heat recovery

Estimated annual CO2e savings (metric tonnes CO2e)

263

Scope

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

20000

Investment required (unit currency – as specified in CC0.4)

39000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Production and Warehouses heating by gas generators heat recovery - the heat provided by gas generator is now forwarded to factory heating system. Annual energy saving is equal to 5% of total energy consumption of our site in Russia.

Activity type

Energy efficiency: Building services

Description of activity

Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

30

Scope

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

12786

Investment required (unit currency – as specified in CC0.4)

55200

Payback period

4 - 10 years

Estimated lifetime of the initiative

6-10 years

Comment

Replacement of the outdoor lighting by new and more efficient luminaries equipped with the latest technology and in compliance with certificates and quality standards, allowing to reduce installed power and improve lighting quality in our factory in Portugal.

Activity type

Energy efficiency: Building fabric

Description of activity

Other, please specify (High-speed automatic Roll-out doors)

Estimated annual CO2e savings (metric tonnes CO2e)

178

Scope

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

9000

Investment required (unit currency – as specified in CC0.4)

31000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

High speed insulated roll-up doors replacement for reduction of conditioned air losses in air-conditioned spaces in our site in Russia.

Activity type

Energy efficiency: Building services

Description of activity

HVAC

Estimated annual CO2e savings (metric tonnes CO2e)

57

Scope

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

5447

Investment required (unit currency – as specified in CC0.4)

14000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

By installing a Variable Speed Drive or VSD in a dust collection system, the fan speed and therefore air volume rate exhausted and power consumption has adjusted to meet the production equipment reduced demand. A control system was installed in the distribution lines and makers to control the VSD in our factory in Kazakhstan.

Activity type

Energy efficiency: Processes

Description of activity

Compressed air

Estimated annual CO2e savings (metric tonnes CO2e)

10

Scope

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

5000

Investment required (unit currency – as specified in CC0.4)

200

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

Reduction in compressed air losses by implementing a leak prevention program and air isolation valves.

Activity type

Energy efficiency: Processes

Description of activity

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

384

Scope

Scope 3

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

763300

Investment required (unit currency – as specified in CC0.4)

4927000

Payback period

4 - 10 years

Estimated lifetime of the initiative

21-30 years

Comment

Brazil curing tobacco farms: 484 traditional tobacco curing barns were upgraded in 2017 reducing firewood consumption from 4.42 to 3.24 kg firewood per kg of tobacco cured.

Activity type

Energy efficiency: Processes

Description of activity

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

124

Scope

Scope 3

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

64350

Investment required (unit currency – as specified in CC0.4)

200632

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Spain curing tobacco farms: replacement of existing fans with high-energy efficient axial fans allowing 30% electrical energy consumption savings during curing.

Activity type

Energy efficiency: Building fabric

Description of activity

Insulation

Estimated annual CO2e savings (metric tonnes CO2e)

218

Scope

Scope 3

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

54048

Investment required (unit currency – as specified in CC0.4)

260982

Payback period

4 - 10 years

Estimated lifetime of the initiative

21-30 years

Comment

Indonesia curing tobacco farms: 385 flue cured barns were upgraded to with new rocket barn design with venturi furnaces to reduce firewood consumption in Lombok, Indonesia.

Activity type

Energy efficiency: Building fabric

Description of activity

Insulation

Estimated annual CO2e savings (metric tonnes CO2e)

46

Scope

Scope 3

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

58500

Investment required (unit currency – as specified in CC0.4)

174552

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Spain: replace the current barn boiler connections insulation and hot pipelines with a new insulation made of rock wool and covered with aluminium.

C4.3c**(C4.3c) What methods do you use to drive investment in emissions reduction activities?**

Method	Comment
Dedicated budget for energy efficiency	Our Energy Management Program (over US \$90M in investments from 2010-2017) is aimed to reduce our factories' energy consumption and help achieve greenhouse gas emissions targets. In 2017 we achieved our objective to reduce 30% our scope 1 and 2 carbon footprint by 2020 compared to our 2010 baseline and now we are working towards reducing 40% and 60% by 2030 and 2040 respectively.

Method	Comment
Employee engagement	Through our objective setting, Long-Range Planning process and via employee communications, sharing of tools, guidance and best practices. We gave senior management briefings to all operations employees on sustainability in 2017 and run specific focus days and campaigns.
Compliance with regulatory requirements/standards	We take the opportunity of regulatory developments to achieve energy/emissions reductions (e.g. Switzerland - carbon tax exemption following a process upgrade) and in particular when investing in new processes/facilities (e.g. requirements for renewable energy or energy efficiency) for new facilities in Italy, Mexico and our UK offices.
Internal price on carbon	We consider a longer rate of return (4 years or more) for certain energy savings and renewable energy projects. Using a Marginal Abatement Cost Curve (MACC) methodology, we set in 2016 an internal price on carbon of 17 USD per ton of CO2 abated and created a central governance for renewable investments.
Other	The examples included in 4.3b are just a few of the Good Agricultural Practices (GAP) activities implemented during 2017. GAP is a broad program covering our tobacco suppliers in 4 themes – governance, people, crop and environment. It promotes an Integrated Production System which supports farmers in improving yield and farm efficiency on a variety of crops (particularly food crops) and not only tobacco. Through GAP, environmental improvement programs are implemented in all the countries where we source tobacco around the world; these programs include: curing barn efficiency improvements; curing fuel switching to greener fuels; eliminating the use of coal; increasing the use of biomass; and helping farmers become wood self-sufficient and seeking traceable sources of sustainable wood.
Dedicated budget for other emissions reduction activities	We have developed a renewable energy strategy with an initial focus on low-carbon electricity uptake in the EU. We commenced the program in 2012 and continued to implement it in more facilities in 2017. We continue to seek new opportunities to purchase greener energy.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

No

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2010

Base year end

January 31 2010

Base year emissions (metric tons CO2e)

443186

Comment**Scope 2 (location-based)****Base year start**

January 1 2010

Base year end

December 31 2010

Base year emissions (metric tons CO2e)

470864

Comment**Scope 2 (market-based)****Base year start**

January 1 2010

Base year end

December 31 2010

Base year emissions (metric tons CO2e)

470864

Comment**C5.2**

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations

ISO 14064-1

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Row 1

Gross global Scope 1 emissions (metric tons CO2e)

388384

End-year of reporting period

<Field Hidden>

Comment

Our scope 1 emissions correspond to manufacturing, offices, warehouses and sales fleet.

Row 2

Gross global Scope 1 emissions (metric tons CO2e)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

Row 3

Gross global Scope 1 emissions (metric tons CO2e)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

Row 4

Gross global Scope 1 emissions (metric tons CO2e)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Our scope 2 emissions correspond to manufacturing, offices and warehouses.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Row 1

Scope 2, location-based

438896

Scope 2, market-based (if applicable)

241355

End-year of reporting period

<Field Hidden>

Comment

Our scope 2 emissions correspond to our manufacturing, offices and warehouses.

Row 2

Scope 2, location-based

<Field Hidden>

Scope 2, market-based (if applicable)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

Row 3

Scope 2, location-based

<Field Hidden>

Scope 2, market-based (if applicable)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

Row 4

Scope 2, location-based

<Field Hidden>

Scope 2, market-based (if applicable)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

3156000

Emissions calculation methodology

Includes tobacco (including the impact of curing tobacco), other direct materials, composing the cigarette, the pack and transport packaging (packaging, cigarette papers, acetate tow for filters, etc.), and indirect material & services (marketing, professional services, etc.). Our carbon footprint is based on actual data (primary data) and average industry data (secondary

data), including a number of estimates and assumptions, using impact databases. Elements of our carbon footprint have been modeled using the Life Cycle Assessment (LCA) tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 standards and now the GHG Protocol Scope 3 Accounting and Reporting Standard. Due to the new baseline calculations, we have been able to use real data and extrapolated emissions from 2016 based on production volume changes.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

40

Explanation

Based on our current LCA. We continue our engagement process with direct materials and other suppliers in order to get more primary data. In 2016, we improved the model by using primary data from our third party stemmeries, acetate tow suppliers and IMS calculation refinement based on USA 2002 Input/Output database and de-carbonation of the economy. In 2014 we joined CDP Supply Chain to support this process and since then, every year, we have invited new suppliers and increased the scope from requesting CO2 to water and deforestation.

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

117500

Emissions calculation methodology

Emission factors for infrastructure (taking the proxy of a chemical factory), were used from a life cycle assessment database, ecoinvent v2.2, and modeled in Simapro.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Existing infrastructure emissions were calculated during our original carbon footprint calculation and we use that to estimate the carbon emissions related to the manufacture and transport of capital goods (equipment, machinery, buildings, facilities, and vehicles) purchased by PMI annually.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Metric tonnes CO2e

129000

Emissions calculation methodology

GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Emissions are calculated by multiplying fuel quantities and electricity purchased by upstream and Transmission and Distribution (T&D) GHG emission factors. When no emission factor is available for a specific country, the emission factor provided by UK Government (DEFRA) for the corresponding region is applied. The quality of the primary data used is high and the quality of the secondary data is medium. The quality of the emissions data is considered medium.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

The primary data used are the types and quantities of fuels and electricity used by PMI in 2017. Secondary data are used for upstream and T&D GHGs emission factors. For fossil and biogenic fuels, the emission factors are global without geographic differentiation. For electricity, T&D losses and heat losses, GHGs emissions are specific to each country or region. The activity data come from PMI's internal reporting tool. The GHGs emission factors used are taken from DEFRA guidelines for GHG accounting - 2017 and ecoinvent v2.2.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

476600

Emissions calculation methodology

Estimates for tobacco and direct materials transport. Our carbon footprint is based on actual data (primary data) and average industry data (secondary data) from information received from our suppliers invited to respond to the CDP supply chain program. Elements of our carbon footprint have been modeled using the LCA tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 series of standards and the draft Scope 3 Accounting and Reporting Standard as released by the WBCSD/WRI GHG Protocol Initiative. We have extrapolated these emissions from 2015 based on production volume changes.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

25

Explanation

In 2017, we improved the model by using primary data for ocean and air transportation and checked with the data received from our suppliers in CDP Supply Chain Program.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

9000

Emissions calculation methodology

GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. The waste flows are broken down in over 50 different waste types and treatment methods. The waste-type specific method is used to calculate GHG emissions. Each treatment is associated with an emission factor to assess the GHG emissions (secondary data) from the treatment (ecoinvent 2.2, IPCC 2007 GWP100). As per the Technical Guidance for Calculating Scope 3 Emissions of the GHG Protocol (p.80), emissions from incineration with energy recovery and from recycling are not included in the assessment, to avoid double counting. An estimation of the emissions from the transportation of the waste to the recycling or incineration facility is performed. The emissions from this transportation step are calculated as follows: 0.134 (transport, lorry > 16t, fleet average, RER, in CO₂-eq / tkm) * 35 km (assumption) * mass of waste recycled or incinerated with energy recovery (in tonnes). It is assumed that the paper, cardboard and acetate tow sent to composting are fully degraded and therefore emit only biogenic CO₂, not reported in the scope 1, 2 and 3 of the GHG Protocol. The transportation of this waste to the composting facility is accounted for. Quality: The quality of the primary data used is high. However, due to the simplification involved in the modeling (no geographical differentiation on the waste treatment was made), therefore the overall quality of the emission data is estimated as medium.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

The primary data used for this category are the mass of waste generated in production centers, excluding office waste. The secondary data are the emission factors for the different waste treatment, taken from a life cycle assessment database, ecoinvent v2.2.

Business travel**Evaluation status**

Relevant, calculated

Metric tonnes CO2e

119000

Emissions calculation methodology

Calculation for this category has been improved this year by using raw booking agency data corrected by precise air distance flown based on airport coordinates and specific emissions per passenger and per km flown. For this task we received the

help of our partner Myclimate and their Flight Emission Calculator. We also included for the first time emissions an estimation on emissions from hotels, taxis, rental cars and boats.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

90

Explanation

Covering around 80 countries through PMI air miles accounting which is estimated at 90% of overall travel - this is then extrapolated to 100%.

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

65000

Emissions calculation methodology

In 2017, we reviewed this category with the help of The Carbon Trust and concluded and created a new model. For each country grouping that PMI has operations in, the proportions of commuting type by method (car, train, underground, bus or motorbike) were stated, along with the average return trip distance per day, and the number of working days in a year. When multiplied by the relevant emission factor (BEIS (DEFRA) 2017 Factors) a value for the average emissions per commuter per year is determined. For each country, this value was then multiplied by the number of employees per country.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

10

Explanation

Only some sites have undertaken mobility surveys of employees (commuting), therefore primary data is limited.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

In 2017, we reviewed this category with the help of The Carbon Trust and concluded that PMI do lease some warehouse space from third parties with emissions that are not accounted for in scope 1 and 2. However, for this scope 3 model, this warehouse space is included within category 4 – upstream transportation and distribution. Therefore this category 8 has been excluded to avoid double counting

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

71500

Emissions calculation methodology

Distribution of finished goods; estimate based on 8 key markets extrapolated for the whole of PMI. Our carbon footprint is based on actual data (primary data) and average industry data (secondary data) from information received from our suppliers invited to respond to the CDP supply chain program. Elements of our carbon footprint have been modeled using the LCA tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 series of standards and the draft Scope 3 Accounting and Reporting Standard as released by the WBCSD/WRI GHG Protocol Initiative. We have extrapolated these emissions from 2015 based on production volume changes.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

25

Explanation

Based on estimated distances for defined transport means in 8 key markets.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

0

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

In 2017, we reviewed this category with the help of The Carbon Trust and concluded that PMI sold only final products to end-users, and no intermediate products which could be further processed, transformed or included into other products, therefore this category has been excluded.

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

109500

Emissions calculation methodology

This assumes the use of cigarette lighters. Our carbon footprint is based on actual data (primary data) and average industry data (secondary data) from information received from our suppliers invited to respond to the CDP supply chain program. Elements of our carbon footprint have been modeled using the LCA tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 series of standards and the draft Scope 3 Accounting and Reporting Standard as released by the WBCSD/WRI GHG Protocol Initiative. We have extrapolated these emissions from 2015 based on sales volume changes.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

25

Explanation

Based on estimated usage of lighter fuel per cigarette.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

266300

Emissions calculation methodology

Downstream waste treatment and street cleaning related to cigarette butts and waste packaging. Our carbon footprint is based on actual data (primary data) and average industry data (secondary data) from information received from our suppliers invited to respond to the CDP supply chain program. Elements of our carbon footprint have been modeled using the LCA tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 series of standards and the draft Scope 3 Accounting and Reporting Standard as released by the WBCSD / WRI GHG Protocol Initiative. We have extrapolated these emissions from 2015 based on sold volume changes.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

10

Explanation

Based on Swiss market assumptions and extrapolation.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

0

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

In 2017, we reviewed this category with the help of The Carbon Trust and concluded that PMI do lease some office floor-space in certain offices around the world, but this has been confirmed as extremely small, and regarded as de minimis, therefore this category has been excluded”.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

0

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

In 2017, we reviewed this category with the help of The Carbon Trust and concluded that whilst PMI pay other entities to manufacture finished goods (accounted for in category 1a) from materials purchased by PMI (also accounted for in category 1a), as ownership of finished goods always returns back to PMI, there are no examples of franchise operations to account for, therefore this category has been excluded.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

0

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

In 2016, we finished a baseline footprint study with the expert company Quantis to better understand our scope 3 emissions. This resulted in a more accurate model using primary data. Primary data sources used in this study were internal databases, CDP supply chain program data from our suppliers, and direct interaction with our suppliers. As a result, an overall increase in 2010 baseline occurred (from 6,324 to 7,910 kg CO₂e/mio cig), and key areas to reduce emissions were highlighted. Our downstream leased assets were confirmed as not material to our carbon footprint since their associated emissions are small in comparison to our total Scope 3 emissions and do not meet our 5% materiality threshold.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

0

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

There are no other (upstream) emissions at this time.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

0

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

There are no other (downstream) emissions at this time.

C-AC6.6/C-FB6.6/C-PF6.6

(C-AC6.6/C-FB6.6/C-PF6.6) Can you breakdown your Scope 3 emissions by relevant business activity areas?

Yes

C-AC6.6a/C-FB6.6a/C-PF6.6a

(C-AC6.6a/C-FB6.6a/C-PF6.6a) Disclose your Scope 3 emissions for each of your relevant business activity areas.

Activity

Agriculture/Forestry

Scope 3 category

Purchased goods and services

Emissions (metric tons CO2e)

1543000

Please explain

These emissions include those corresponding to agricultural practices such as seedling, fertilizers, curing fuels and crop protection agents. Our carbon footprint is based on actual data (primary data) and average industry data (secondary data), including a number of estimates and assumptions, using impact databases. Elements of our carbon footprint have been modeled using the Life Cycle Assessment (LCA) tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 standards and now the GHG Protocol Scope 3 Accounting and Reporting Standard. Due to the new baseline calculations, we have been able to use real data and in cases where no primary data was available extrapolated emissions from 2016 based on production volume changes.

Activity

Distribution

Scope 3 category

Upstream transportation and distribution

Emissions (metric tons CO2e)

476600

Please explain

These emissions include those corresponding to upstream distribution due to ocean, air and overland transportation plus the warehouse emissions in distribution. Our carbon footprint is based on actual data (primary data) and average industry data (secondary data), including a number of estimates and assumptions, using impact databases. Elements of our carbon footprint have been modeled using the Life Cycle Assessment (LCA) tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 standards and now the GHG Protocol Scope 3 Accounting and Reporting Standard. Due to the new baseline calculations, we have been able to use real data and in cases where no primary data was available extrapolated emissions from 2016 based on production volume changes.

Activity

Distribution

Scope 3 category

Downstream transportation and distribution

Emissions (metric tons CO2e)

71500

Please explain

These emissions include those corresponding to downstream distribution due to in market local distribution. Our carbon footprint is based on actual data (primary data) and average industry data (secondary data), including a number of estimates and assumptions, using impact databases. Elements of our carbon footprint have been modeled using the Life Cycle Assessment (LCA) tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 standards and now the GHG Protocol Scope 3 Accounting and Reporting Standard. Due to the new baseline calculations, we have been able to use real data and in cases where no primary data was available extrapolated emissions from 2016 based on production volume changes.

Activity

Consumption

Scope 3 category

Use of sold products

Emissions (metric tons CO2e)

109500

Please explain

This assumes the use of cigarette lighters. Our carbon footprint is based on actual data (primary data) and average industry data (secondary data), including a number of estimates and assumptions, using impact databases. Elements of our carbon footprint have been modeled using the Life Cycle Assessment (LCA) tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 standards and now the GHG Protocol Scope 3 Accounting and Reporting Standard. Due to the new baseline calculations, we have been able to use real data and in cases where no primary data was available extrapolated emissions from 2016 based on production volume changes.

Activity

Consumption

Scope 3 category

End of life treatment of sold products

Emissions (metric tons CO2e)

266300

Please explain

Downstream waste treatment and street cleaning related to cigarette butts and waste packaging. Our carbon footprint is based on actual data (primary data) and average industry data (secondary data), including a number of estimates and assumptions, using impact databases. Elements of our carbon footprint have been modeled using the Life Cycle Assessment (LCA) tool, Simapro. For our base year in 2010, we undertook a 3rd party review against ISO 14040 standards and now the GHG Protocol Scope 3 Accounting and Reporting Standard. Due to the new baseline calculations, we have been able to use real data and in cases where no primary data was available extrapolated emissions from 2016 based on production volume changes.

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

Yes

C6.7a

(C6.7a) Provide the emissions from biologically sequestered carbon relevant to your organization in metric tons CO2.

3697

C-AC6.8/C-FB6.8/C-PF6.8

(C-AC6.8/C-FB6.8/C-PF6.8) Is biogenic carbon pertaining to your direct operations relevant to your current CDP climate change disclosure?

No

C-AC6.9/C-FB6.9/C-PF6.9

(C-AC6.9/C-FB6.9/C-PF6.9) Do you collect or calculate greenhouse gas emissions for each commodity reported as significant to your business in C-AC0.7/FB0.7/PF0.7?

Agricultural commodities

Timber

Do you collect or calculate GHG emissions for this commodity?

Yes

Please explain

We collect and calculate emissions from curing fuels used for tobacco and other direct materials used in our manufacturing process like packaging, cigarette papers, acetate tow for filters, etc.

Agricultural commodities

Tobacco

Do you collect or calculate GHG emissions for this commodity?

Yes

Please explain

These emissions include those corresponding to agricultural practices such as seeding, fertilizing, curing fuels and crop protection agents and the logistics required to source tobacco from farms to our buying stations and from there to the stemmeries.

C-AC6.9a/C-FB6.9a/C-PF6.9a

(C-AC6.9a/C-FB6.9a/C-PF6.9a) Report your greenhouse gas emissions figure(s) for your disclosing commodity(ies), explain your methodology, and include any exclusions.

Cattle products

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

Cotton

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

Fish and seafood from aquaculture

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

Palm Oil

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

Rice

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

Soy

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

Sugar

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

Timber

Reporting emissions by

Total

Emissions (metric tons CO2e)

1033000

Denominator: unit of production

<Field Hidden>

Change from last reporting year

Much lower

Please explain

Beyond our agricultural supply chain, we engage with other direct materials suppliers which use timber as raw material and invite them to participate in our CDP supply chain, we collect primary data (e.g. emissions allocated) and collaborate with them to reduce carbon footprint .

Tobacco

Reporting emissions by

Total

Emissions (metric tons CO2e)

1676000

Denominator: unit of production

<Field Hidden>

Change from last reporting year

Lower

Please explain

These emissions include all activities performed by third party farmers related with tobacco seedling, fertilizers, crop protection agents, transport and mechanization and curing. Our Global Agricultural Practices (GAP) promotes environmentally sustainable practices, including the elimination of highly hazardous, Crop Protective Agents (CPA), the promotion of bio-pesticides and the overall reduction of CPA use, biodiversity management and reforestation, as well as water, soil, and waste management. Most GHG emissions related to tobacco come from the curing process for Virginia flue-cured tobacco (Virginia). Our target is to lower the GHG emission intensity related to this curing process by 70% by 2020, compared to a 2010 baseline. We are well on track, with a 38% reduction achieved so far by 2017. To achieve this target we focus on improving curing barn efficiency and eliminating the use of coal and non-sustainable firewood. In 2017, 330,000

CO2 tons savings were achieved due to combination of 4 factors: increased usage of renewable energies (based on current plans, more than 70% of our flue-cured tobacco purchases should be cured with renewable fuel sources by 2020. In 2017, 36% of the flue-cured tobacco we purchased was cured with renewable fuels - versus 29% in 2016 - of which 29% was cured with sustainable sourced firewood and 7% with biomass); curing barn improvement initiatives and related impact on curing fuel consumption reduction due to efficiency gains; switching to fuels with lower emissions; volume allocation switch to markets with lower emission factors per kilo of cured tobacco. As a result, GHG emissions from curing activities were reduced by over 330,000 tCO2e.

Wheat

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

Rubber

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

Other

Reporting emissions by

<Field Hidden>

Emissions (metric tons CO2e)

<Field Hidden>

Denominator: unit of production

<Field Hidden>

Change from last reporting year

<Field Hidden>

Please explain

<Field Hidden>

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.000022

Metric numerator (Gross global combined Scope 1 and 2 emissions)

629739

Metric denominator

unit total revenue

Metric denominator: Unit total

28745000000

Scope 2 figure used

Market-based

% change from previous year

12

Direction of change

Decreased

Reason for change

The main reason for change is the decrease in absolute CO2e emissions by 5.5% (from 666,039 tonnes in 2016 to 629,739 tonnes in 2017), mainly driven by carbon reduction activities in our manufacturing facilities (such as on-site renewable projects, energy efficiency projects and increased green electricity sourcing) despite the increase of our operational scope (new factory) and despite a 7% increase in net revenues (from U\$26.7 billion in 2016 to U\$28.7 billion in 2017). The intensity

number is derived from our 2017 CO₂e emissions of 629,739 tonnes divided by net revenues of US\$28.7 billion. A combination of favorable pricing and judicious cost management drove strong currency-neutral financial results. The term “net revenues” refers to operating revenues from the sale of our products, excluding excise taxes, and net of sales and promotion incentives. We believe that the most appropriate basis of disclosure is net revenue (as defined) and in line with CDP guidance.

Intensity figure

7.81

Metric numerator (Gross global combined Scope 1 and 2 emissions)

629739

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

80600

Scope 2 figure used

Market-based

% change from previous year

6.7

Direction of change

Decreased

Reason for change

The main reason for this change is the decrease in absolute CO₂e emissions by 5.5% (from 666,039 tonnes in 2016 to 629,739 tonnes in 2017), mainly driven by carbon reduction activities in our manufacturing facilities (such as on-site renewable projects, energy efficiency projects and increased green electricity sourcing) and despite an increase in our operational scope (new factory) and an increase of total number of employees to 80,600. The intensity number is worked out from our 2017 CO₂e emissions of 629,739 tonnes divided by 80,600 FTE employees. In 2016 we had 666,039 tonnes of CO₂e emissions and 79,500 FTE employees.

Intensity figure

0.57

Metric numerator (Gross global combined Scope 1 and 2 emissions)

485555

Metric denominator

unit of production

Metric denominator: Unit total

859114

Scope 2 figure used

Market-based

% change from previous year

8

Direction of change

Decreased

Reason for change

This covers Scope 1 and 2 emissions from our manufacturing facilities only. We decrease our CO2 intensity from 614kg CO2 per million cigarettes equivalent produced in 2016 to 565kg CO2 per million cigarettes equivalent produced in 2017. This was driven by our Energy Management Program activities, and renewable energy projects and almost flat production volumes. The intensity number is worked out from our 2017 485,555 CO2e emissions of tonnes (for manufacturing) divided by 859,114 billion cigarettes equivalent production volume. In 2016 we had 527,927 tonnes of CO2e emissions and 859.640 billion cigarettes equivalent production volume.

C7. Emissions breakdowns**C7.1****(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?**

Yes

C7.1a**(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).**

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	387009	IPCC Fifth Assessment Report (AR5 – 100 year)

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CH4	528	IPCC Fifth Assessment Report (AR5 – 20 year)
N2O	847	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Albania	104.63
Algeria	297.65
Argentina	9748.62
Armenia	160.05
Australia	1436.92
Austria	63.91
Bangladesh	103.77
Bosnia and Herzegovina	105.8
Brazil	14849.18
Bulgaria	112.28
Canada	3598.89
Chile	114.42
China	167.67
China, Hong Kong Special Administrative Region	129.89
China, Macao Special Administrative Region	1.48
Colombia	2548.09
Costa Rica	1050.53
Croatia	319.7
Czechia	5324.95

Country/Region	Scope 1 emissions (metric tons CO2e)
Denmark	154.81
Dominican Republic	843.3
Ecuador	1182.97
Egypt	1278.93
El Salvador	314.92
Finland	118.3
France	1492.52
Georgia	174.81
Germany	20940.82
Greece	2986.87
Guatemala	306.28
Hungary	616.65
India	144.43
Indonesia	53096.3
Italy	31868
Jamaica	82.02
Japan	5601.45
Jordan	660.83
Kazakhstan	4370.26
Kuwait	108.32
Lebanon	104.2
Malaysia	12527.48
Mexico	11167.74
Morocco	246.84
Netherlands	28405.17
Lithuania	1574.14

Country/Region	Scope 1 emissions (metric tons CO2e)
New Zealand	120.75
Nicaragua	191.8
Norway	45.84
Pakistan	9428.15
Panama	58.75
Paraguay	31.86
Peru	156.7
Philippines	37797.93
Poland	14073.82
Republic of Korea	3070.36
Republic of Moldova	93.24
Réunion	90.46
Romania	5077.8
Russian Federation	34959.71
Senegal	1249.91
Serbia	5868.78
Singapore	540.52
Slovakia	436.07
Slovenia	124.66
South Africa	3145.95
Spain	1322.65
Sweden	239.79
Switzerland	3831.36
Taiwan (Province of China)	295.81
Republic of Macedonia	88.06
Thailand	1509.87

Country/Region	Scope 1 emissions (metric tons CO2e)
Tunisia	46.55
Turkey	20681.08
Ukraine	8952.99
United Arab Emirates	644.02
United Kingdom of Great Britain and Northern Ireland	496.43
United Republic of Tanzania	21.15
Uruguay	31.99
Venezuela (Bolivarian Republic of)	150.44
Viet Nam	221.16
Other, please specify (Rest of the World)	5371
Israel	1298.57
Portugal	6011.47

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By activity

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Manufacturing	267991
Offices and Warehouses	805
Vehicle Fleet	115022
Private Aircraft	4566

C-AC7.4/C-FB7.4/C-PF7.4

(C-AC7.4/C-FB7.4/C-PF7.4) Do you include emissions pertaining to your business activity(ies) in your direct operations as part of your global gross Scope 1 figure?

Yes

C-AC7.4b/C-FB7.4b/C-PF7.4b

(C-AC7.4b/C-FB7.4b/C-PF7.4b) Report the Scope 1 emissions pertaining to your business activity(ies) and explain any exclusions. If applicable, disaggregate your agricultural/forestry by GHG emissions category.

Activity

Processing/Manufacturing

Emissions category

<Field Hidden>

Emissions (metric tons CO2e)

267991

Methodology

Default emissions factor

Please explain

2017 DEFRA emission factors

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Argentina	14615.1	14615.1	38040	0
Brazil	2736.04	2736.04	17472	0
Canada	2038.93	0	13485	13485
Colombia	1704.68	1075.99	8511	3139

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Costa Rica	7.02	7.02	1064	0
Czechia	13298.25	0	25515	25515
Dominican Republic	574.62	574.62	959	0
Ecuador	427.21	427.21	1275	0
Germany	27765.35	146.77	64676	61312
Greece	9497.74	0	16255	16255
Indonesia	80140.32	80140.32	93186	0
Italy	26726.99	0	78058	77985
Jordan	2771.55	2771.55	4712	0
Kazakhstan	4115.36	4115.36	9900	0
Malaysia	6456.92	6456.92	9399	0
Mexico	12126.12	0	26384	26384
Pakistan	2012.72	2012.72	4903	0
Philippines	38115.15	38115.15	62046	0
Poland	46124.58	2750.98	73335	59400
Portugal	8774.61	0	25324	25324
Romania	5545.81	0	16306	16306
Russian Federation	26183.55	26183.55	66287	0
Senegal	3391.02	3391.02	5500	0
Serbia	15993.53	0	21122	21122
South Africa	3557.16	3557.16	3592	0
South Korea	8405.84	8405.84	15969	0

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Switzerland	246.06	0	10168	10168
Turkey	17810.9	7224.5	40378	24000
Ukraine	11675.32	11675.32	28665	0
Venezuela (Bolivarian Republic of)	1180.27	1180.27	4181	0
Other, please specify (Rest of the World)	24770	23792	60816	7614
Lithuania	4071	0	21925	21925
Netherlands	16036	0	32807	32807

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By activity

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Manufacturing	414126	217563
Offices and Warehouses	24770	23792

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	29157	Decreased	4.4	In 2017, 29,157 tCO2e of Scope 1 and 2 emissions were reduced by our renewable energy consumption. Our total Scope 1 and 2 emissions in the previous year were 666,039 tCO2e. Therefore, we arrived at a 4.4% decrease: $(29,157/666,039)*100 = 4.4$. The main drivers were both additional renewable energy onsite projects (around 400 tonnes reduced) and sourcing green electricity from new countries like Serbia, Colombia, Mexico and Turkey (around 28,000 tonnes reduced).
Other emissions reduction activities	30863	Decreased	4.6	In 2017, 30,863 tCO2e of Scope 1 and 2 emissions were reduced by our emissions reduction activities. Our total Scope 1 and 2 emissions in the previous year were 666,039 tCO2e. Therefore, we arrived at a 4.6% decrease: $(30,863/666,039)*100 = 4.6$. We had an overall decrease in our absolute CO2 emissions (from 666,039 tonnes in 2016 to 629,739 tonnes in 2017 i.e. a total of 36,300 tonnes reduced or 5.5%) driven by the 4.6% decrease due to emission reduction initiatives, the 4.4% decrease due to renewable energy consumption, the 0.4% decrease due to change in output, a 4% increase due to change in scope as described below. The main items in emission reduction activities were a 3% reduction in Scope 2 emissions from manufacturing (driven by both additional renewable energy uptake - around 29,157 tonnes reduced - and energy efficiency projects) and more than 2% reduction in Scope 1 emissions from manufacturing (driven by fuel switching to greener fuels and energy efficiency projects).
Divestment	0	No change	0	PMI did not have any changes due to divestment in 2017.
Acquisitions	0	No change	0	PMI did not have any changes due to acquisition in 2017.
Mergers	0	No change	0	PMI did not have any changes due to mergers in 2017.
Change in output	2933	Decreased	0.4	In 2017, 2,933 tCO2e of Scope 1 and 2 were reduced due to a decrease in output. Our total Scope 1 and 2 emissions in the previous year were 666,039 tCO2e. Therefore, we arrived at a 0.4% decrease: $(2,933/666,039)*100=0.4\%$. The main drivers for this were a slight decrease in production volume and kms driven by our vehicle fleet.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in methodology	0	No change	0	PMI did not have any changes due to change in methodology in 2017.
Change in boundary	26653	Increased	4	In 2017, 26,653 Tons of CO2 were added to our scope due to a starting the production of our new Reduced Risk Products factory in Italy. Our total Scope 1 and 2 emissions in the previous year were 666,039 tCO2e. Therefore, we arrived at a 4% increase: $(26,653/666,039)*100=4\%$.
Change in physical operating conditions	0	No change	0	PMI did not have any changes due to change in physical operating conditions in 2017.
Unidentified	0	No change	0	PMI did not have any changes due to unidentified reasons in 2017.
Other	0	No change	0	PMI did not have any changes due to other reasons in 2017.

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	12330	1549517	1561847
Consumption of purchased or acquired electricity	<Field Hidden>	435125	449840	884965
Consumption of purchased or acquired heat	<Field Hidden>	17250	0	17250
Consumption of purchased or acquired steam	<Field Hidden>	<Field Hidden>	<Field Hidden>	<Field Hidden>
Consumption of purchased or acquired cooling	<Field Hidden>	<Field Hidden>	<Field Hidden>	<Field Hidden>
Consumption of self-generated non-fuel renewable energy	<Field Hidden>	1218	<Field Hidden>	1218
Total energy consumption	<Field Hidden>	473536	1991743	2465279

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of steam	Yes

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Jet Kerosene

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

17514

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Field Hidden>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Biogasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1751

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Field Hidden>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Brown Coal Briquettes (BKB)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

29092

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

29092

MWh fuel consumed for self-generation of cooling

<Field Hidden>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

236271

MWh fuel consumed for the self-generation of electricity

45524

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Field Hidden>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Fuel Oil Number 4

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

39839

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

39839

MWh fuel consumed for self-generation of cooling

<Field Hidden>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Petrol

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

249846

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Field Hidden>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

955605

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

221941

MWh fuel consumed for self-generation of steam

665822

MWh fuel consumed for self-generation of cooling

<Field Hidden>

MWh fuel consumed for self- cogeneration or self-trigeneration

67843

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

21351

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Field Hidden>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Wood Chips

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

10580

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

10580

MWh fuel consumed for self-generation of cooling

<Field Hidden>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Acetylene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Agricultural Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Alternative Kiln Fuel (Wastes)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Animal Fat

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Animal/Bone Meal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Anthracite Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Asphalt

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Aviation Gasoline

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Bagasse

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Bamboo

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Basic Oxygen Furnace Gas (LD Gas)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biodiesel

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biodiesel Tallow

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biodiesel Waste Cooking Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Bioethanol

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biogas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biogasoline

Emission factor

0.007

Unit

kg CO2e per liter

Emission factor source

Emission factor provided by UK Government (DEFRA)

Comment

Biomass Municipal Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biomethane

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Bitumen

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Bituminous Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Black Liquor**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Blast Furnace Gas**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Brown Coal Briquettes (BKB)**Emission factor**

90.25

Unit

kg CO2e per GJ

Emission factor source

Emission factor provided by UK Government (DEFRA)

Comment**Burning Oil****Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Butane

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Butylene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Charcoal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coal Tar

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coke

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coke Oven Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coking Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Compressed Natural Gas (CNG)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Condensate

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Crude Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Crude Oil Extra Heavy

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Crude Oil Heavy

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Crude Oil Light

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Diesel

Emission factor

2.67

Unit

kg CO2e per liter

Emission factor source

Emission factor provided by UK Government (DEFRA)

Comment

Distillate Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Dried Sewage Sludge

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Ethane

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Ethylene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Oil Number 1

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Oil Number 2

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Oil Number 4**Emission factor**

79.16

Unit

kg CO2e per GJ

Emission factor source

Emission factor provided by UK Government (DEFRA)

Comment**Fuel Oil Number 5****Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Oil Number 6**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Gas Coke

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Gas Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Gas Works Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

GCI Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

General Municipal Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Grass

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Hardwood

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

**Heavy Gas Oil
Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Hydrogen

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Industrial Wastes

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Isobutane

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Isobutylene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Jet Gasoline

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Jet Kerosene

Emission factor

2.54

Unit

kg CO2 per liter

Emission factor source

Emission factor provided by UK Government (DEFRA)

Comment

Kerosene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Landfill Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Light Distillate

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Lignite Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Liquefied Natural Gas (LNG)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Liquefied Petroleum Gas (LPG)

Emission factor

63.98

Unit

kg CO2e per GJ

Emission factor source

Emission factor provided by UK Government (DEFRA)

Comment

Liquid Biofuel

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Lubricants

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Marine Fuel Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Marine Gas Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Metallurgical Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Methane

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Motor Gasoline

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Naphtha

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Natural Gas

Emission factor

56.84

Unit

kg CO2e per GJ

Emission factor source

Emission factor provided by UK Government (DEFRA)

Comment

Natural Gas Liquids (NGL)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Natural Gasoline

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Non-Biomass Municipal Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Non-Biomass Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Oil Sands

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Oil Shale

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Orimulsion

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Other Petroleum Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Paraffin Waxes

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Patent Fuel

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

PCI Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Peat

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Pentanes Plus

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Petrochemical Feedstocks

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Petrol**Emission factor**

2.3

Unit

kg CO2e per liter

Emission factor source

Emission factor provided by UK Government (DEFRA)

Comment**Petroleum Coke****Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Petroleum Products**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Pitch**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Plastics

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Primary Solid Biomass

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Propane Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Propane Liquid**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Propylene**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Refinery Feedstocks**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Refinery Gas**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Refinery Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Residual Fuel Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Road Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

SBP

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Shale Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Sludge Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Softwood

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Solid Biomass Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Special Naphtha

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Still Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Straw

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Subbituminous Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Sulphite Lyes

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Tar

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Tar Sands

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Thermal Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Thermal Coal Commercial

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Thermal Coal Domestic

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Thermal Coal Industrial

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Tires

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Town Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Unfinished Oils

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Vegetable Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Waste Oils

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Waste Paper and Card

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Waste Plastics

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Waste Tires

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

White Spirit

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Wood

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Wood Chips

Emission factor

3.54

Unit

kg CO2e per GJ

Emission factor source

Emission factor provided by UK Government (DEFRA)

Comment

Wood Logs

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Wood Pellets

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Wood Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Other

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	50235	50235	1056	1056
Heat	188811	188811	0	0
Steam	745333	745333	10580	10580

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Cooling	284132	284132	150590	150590

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor

Energy attribute certificates, Guarantees of Origin

Low-carbon technology type

Solar PV

Wind

Hydropower

Biomass (including biogas)

MWh consumed associated with low-carbon electricity, heat, steam or cooling

368117

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

Renewable energy (certified green electricity) procurement for the majority of our EU facilities commenced in 2014, certificates available for 2017.

Basis for applying a low-carbon emission factor

Energy attribute certificates, I-RECs

Low-carbon technology type

Solar PV

Wind

Hydropower

Biomass (including biogas)

MWh consumed associated with low-carbon electricity, heat, steam or cooling

53523

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

Renewable energy (certified green electricity) procurement outside of EU, certificates available for 2017.

Basis for applying a low-carbon emission factor

Contract with suppliers or utilities (e.g. green tariff), not supported by energy attribute certificates

Low-carbon technology type

Hydropower

MWh consumed associated with low-carbon electricity, heat, steam or cooling

21099

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

Supply contract with HydroQuebec for our Canadian factory.

C9. Additional metrics**C9.1**

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Waste

Metric value

6.5

Metric numerator

Waste to landfill or incinerated without heat reco

Metric denominator (intensity metric only)

Total waste generated

% change from previous year

35

Direction of change

Increased

Please explain

The start up of our new RRP facilities in Italy, impacted our disposal ratio. This impact in 2018 has already been solved and we are back on track to achieve our long-term target to reduce our disposal ratio below 5%.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

[PMI GHG Verification Statement 2017 external.pdf](#)

Page/ section reference

Page 1: total Scope 1, scope 2 Market and Location based. Page 2 and 3 method and scope.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

[PMI GHG Verification Statement 2017 external.pdf](#)

Page/ section reference

Page 1: total Scope 1, scope 2 Market and Location based. Page 2 and 3 method and scope.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

[PMI GHG Verification Statement 2017 external.pdf](#)

Page/ section reference

Page 1: total Scope 1, scope 2 Market and Location based. Page 2 and 3 method and scope.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope

Scope 3- at least one applicable category

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

[Philip Morris Int SA - verification Scope III.pdf](#)

Page/section reference

Page one

Relevant standard

ISO14064-3

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C6. Emissions data	Year on year change in emissions (Scope 1 and 2)	ISO14064-3	PMI has chosen to verify this data in order to certify our progress in year on year carbon emission reductions in our operations (factories, offices, warehouses and fleet).

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

Switzerland ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

Alberta SGER

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Australia ERF Safeguard Mechanism

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

BC GGIRCA

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Beijing pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

California CaT

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

China national ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Chongqing pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

EU ETS**% of Scope 1 emissions covered by the ETS**

19

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

5623

Allowances purchased

31130

Verified emissions in metric tons CO2e

27466

Details of ownership

Facilities we own and operate

Comment**Fujian pilot ETS****% of Scope 1 emissions covered by the ETS**

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Guangdong pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Hubei pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Kazakhstan ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Korea ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Massachusetts state ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

New Zealand ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Ontario CaT

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Québec CaT

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

RGGI

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Saitama ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Shanghai pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Shenzhen pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Switzerland ETS

% of Scope 1 emissions covered by the ETS

1

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

6705

Allowances purchased

0

Verified emissions in metric tons CO2e

5337

Details of ownership

Facilities we own and operate

Comment**Tianjin pilot ETS****% of Scope 1 emissions covered by the ETS**

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Tokyo CaT**% of Scope 1 emissions covered by the ETS**

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Washington CAR

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

Through our Global Energy Management Program, paired with local reduction initiatives, we have targeted energy and CO2 savings that will reduce the need for purchasing allowances. We balance our allowances purchased over a 3 year timeframe. Energy reduction has enabled 4 of our facilities to be removed from the EU ETS scheme in the last 5 years (moving below total combustion capacity thresholds). We will likely onboard new sites into EU ETS during 2018 due to the new RRP production requirements.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Change internal behavior

Drive low-carbon investment

Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Scope 2

Scope 3

Application

In 2016, a Marginal Abatement Cost Curve (MACC) tool was developed with the company DuPont Sustainable Solutions and an assessment within PMI was performed collecting more than 70 carbon reduction initiatives in our operations footprint. As a result a carbon price was set at 17 USD per tonne of CO2. The internal carbon price is included in every investment that has potential impact on the environment as an attachment to the business plan. This carbon price improves the return on investment on those initiatives that use cleaner technologies and disincentive those initiatives that increase our carbon footprint. Using an internal carbon price in our company is helping to raise awareness around environmental impacts. As an example of carbon price usage, in 2017 we built three high-efficiency tri-generation plants coupled with solar photovoltaic energy generation in Indonesia and Turkey were approved using internal carbon price and the MACC tool as main decision criteria.

Actual price(s) used (Currency /metric ton)

17

Variance of price(s) used

Uniform pricing: single price applied throughout the company that is updated every 1-2 years to reflect the upcoming opportunities for carbon reduction in our operations.

Type of internal carbon price

Shadow price

Internal fee

Impact & implication

As an example of carbon price usage, in 2017 we started the implementation of 2 solar photovoltaic plants, 2 biomass boilers with +8MUSD budgeted using internal carbon price and the MACC tool as main decision criteria. Our current challenge is how to better filter projects that have impact in the environment and thus require using carbon price in their business plan.

Currently we apply a financial threshold of 100kUSD along to our expertise to select the projects.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

% of suppliers by number

88

% total procurement spend (direct and indirect)

27

% Scope 3 emissions as reported in C6.5

82

Rationale for the coverage of your engagement

Covers all tobacco supply chain partners including 350,000 farmers along with direct material suppliers (around 70% of Direct Materials total spend), the majority of our main tobacco and logistics services providers. We have used our carbon footprint calculation to identify the main climate change impacts of our purchased materials. In our direct materials (non-tobacco) area we identified acetate tow, consumer board and paper as significant contributors from a raw materials perspective to our carbon footprint and this is why we prioritized engagement with suppliers in these areas. We engaged with key suppliers in these areas through direct discussions and since 2014 by means of CDP Supply Chain program. We invited suppliers covering tobacco, paper/board, acetate tow, distribution/logistics and some others to collect primary data to improve our carbon footprint model in 2017. In the medium term, we will use this forum to drive decreases in our value chain emissions to reduce our emissions intensity by 30% by 2020. Main engagement areas:

- Tobacco leaf suppliers – through Good Agricultural Practices (GAP) collaboration which covers mandatory requirements for managing energy and climate change (mitigation and adaptation). Implementation of GAP leads to the definition of key areas for improvement where we put initiatives in place to take action, we call these Sustainable Tobacco Production (STP) initiatives which we work on with our suppliers. We also focus on improving tobacco curing, where according to our carbon footprint studies are the largest source of GHG emissions in the tobacco supply chain.
- Direct Materials suppliers – in 2017, we released our Responsible Sourcing Principles (RSP) and Implementation Guidelines, which encourages them to minimize their energy use and GHG emissions. The RSP applies to all suppliers doing business with PMI. We aim to influence their behavior through procurement and product development activities which include the definition of parameters of environmental performance for different raw material components.
- Equipment manufacturers – through an industry colloquium which helps target energy efficiency

developments for our manufacturing equipment. Through engagement and information exchange we aim to increase the proportion of our carbon footprint that is based on primary data rather than LCA.

Impact of engagement, including measures of success

Our measure of success is to achieve at least 80% response rate in the CDP supply chain program. In 2017 the impact of this engagement was a 100% response rate, which contributed to PMI's achieving a CDP Supply Chain A rating. We had a supplier respond to the CDP for the first time and our invitation was the main driver. The information received has been used to fine tune our carbon footprint model in 2017. Different one-on-one meetings have occurred with direct materials and logistics suppliers like acetate tow, paper or ocean logistics and a collaboration has started to reduce emissions. Our tobacco leaf suppliers are contractually required to implement GAP program. To assess suppliers' conformity against GAP, the Sustainable Tobacco Program (STP) is used which includes an annual self-assessment and on-site reviews by AB Sustain, an independent company. As part of the on-site review, AB Sustain looks for metrics and performance on reducing water and GHG emissions, eliminating hazardous pesticides, using of bio-pesticides, reforestation, soil and waste management. Based on the assessed scores and our measure of success is we expect our leaf suppliers to demonstrate continuous improvements year on year. Results of these assessments are included in our supplier scorecards and used to make future decisions such as tobacco purchase volume allocation through our supplier base. GAP is also the foundation of our goal to transform resiliency and tolerance of tobacco crops to effects of climate change. We also have a measure of success to reduce the GHG emission intensity related to tobacco curing by 70% by 2020, compared to a 2010 baseline. We are well on track with a 38% reduction achieved as of 2017. A monitoring and verification framework has been launched in 2017 across our leaf supply chain to monitor and verify the impact of the more than 40 initiatives being implemented. These initiatives support the achievement of our 70% carbon footprint reduction goal by 2020 by eliminating the use of coal and non-sustainable firewood, promoting the use of alternative biomass fuels and improving curing efficiency. For equipment manufacturers, by 2020 we expect primary data to cover at least 80% of our value chain emissions for our LCA.

Comment

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism

% of suppliers by number

88

% total procurement spend (direct and indirect)

99

% Scope 3 emissions as reported in C6.5

82

Rationale for the coverage of your engagement

Initially, in the wake of stakeholder concerns, we focused on addressing labor and other risks in the places where we source tobacco. Moreover, tobacco suppliers are most crucial to our business and highly impacted by climate and water risk. We thus focus our efforts in this area and all of the 350,000 farmers across 28 countries, are required to implement Good Agricultural Practices (GAP) . Our GAP program has 3 pillars that allows us to address the impact of tobacco farming on the environment (environment), how to make tobacco farming profitable and sustainable (crop), and how to improve working conditions on farms (labor). In 2011, we further enhanced the labor related section and developed the Agricultural Labor Practices (ALP) program and included it as a key pillar of our broader GAP. ALP covers the topics of child labor, fair treatment, income and work hours, forced labor, safe work environment, freedom of association, and compliance with the law. GAP also is the basis of other engagement initiatives with suppliers, such as our efforts to reduce GHG emissions associated with tobacco curing. According to our carbon footprint studies tobacco curing is the largest source of GHG emissions in our tobacco supply chain. In 2017, we released our Responsible Sourcing Principles (RSP) and Implementation Guidelines, which established the foundation for a more comprehensive and systematic approach to addressing supply chain sustainability beyond our agricultural/tobacco supply chain. The RSP applies to all suppliers not covered by GAP.

Impact of engagement, including measures of success

Our Good Agricultural Practices (GAP) program applies to farmers contracting with PMI and our suppliers and includes Agricultural Labor Practices (ALP) covering the topics of child labor, fair treatment, income and work hours, forced labor, safe work environment, freedom of association, and compliance with the law. To assess suppliers' conformity against GAP, the Sustainable Tobacco Program (STP) is used which includes an annual self-assessment and on-site reviews by AB Sustain, an independent company. As part of the on-site review, AB Sustain looks for metrics and performance on reducing water and GHG emissions, eliminating hazardous pesticides, using of bio-pesticides, reforestation, soil and waste management. Based on the assessed scores and our measure of success is we expect our leaf suppliers to demonstrate continuous improvements year on year. Results of these assessments are included in our supplier scorecards and used to make future decisions such as tobacco purchase volume allocation through our supplier base. GAP is also the foundation of our goal to transform resiliency and tolerance of tobacco crops to affects of climate change. We also have a measure of success to reduce the GHG emission intensity related to tobacco curing by 70% by 2020, compared to a 2010 baseline. We are well on track with a 38% reduction achieved between 2010 and 2017. A monitoring and verification framework has been launched across our leaf supply chain in 2017 to monitor and verify the impact of the more than 40 initiatives being implemented. These initiatives support the achievement of our 70% carbon footprint reduction goal for 2020 by eliminating the use of coal and non sustainable firewood, promoting the use of alternative biomass fuels and improving curing efficiency. In 2017 we started to

roll out the RSP communicating directly with global partners covering 99% of our total spend on global vendors by December 2017. The RSP provides PMI's expectations in the areas of human rights and labor rights, the environment, and business integrity, and applies to all suppliers doing business with PMI. We also engaged with a number of suppliers to clarify questions related mainly to the implementation of these principles.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Collaboration & innovation

Details of engagement

Run a campaign to encourage innovation to reduce climate change impacts

Size of engagement

6

% Scope 3 emissions as reported in C6.5

2

Please explain the rationale for selecting this group of customers and scope of engagement

Key account customers: We have engaged with several key account customers on sustainability topics to support their own carbon footprint reduction targets in their supply chains. We also regularly engage on sustainability topics with other key accounts and stakeholders through questionnaire responses and presentations. We prioritize our customer engagement based on the alignment between the customer's sustainability targets and PMI sustainability targets.

Impact of engagement, including measures of success

We will measure our success through direct feedback from our customers where, in some cases, sustainability topics are part of our business relationship review. Our measure of success is based on the increase interest from our key customers on getting more information from our environmental program and on how to participate to help further reduce our emissions (e.g. local logistic network optimization programs).

C12.1c

(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.

Employees: Every year most affiliates perform voluntary awareness and promotion campaigns programs in order to increase employees' active participation in Environmental programs and to make carbon footprint reduction part of the company's culture. Awards and recognition for best practices form a core element of such campaigns. Examples of these campaigns include waste reduction tips as part of the annual eco-week in Turkey, involving employees and their families in tree planting activities in Argentina. Other example is 2017 eco-week in Switzerland. This campaign is an example of the multiple initiatives in our factories to increase awareness around the environment. In this campaign, a 4 day event with each day a different topic all around the environment each day reaching more than 2,000 employees. Day 1: "Environment for dummies" , day 2: CO2, how to reduce the impact , day 3: Reduce & Reuse Waste , day 4: Discover our bees and beehives. A daily quiz was organized and various great prizes to win.

External consultants and third party verification companies: we have a broad number of partners that provide us with technical advice around climate change, help us in the project implementation phase and then tracking their progress. Companies like Quantis, SGS, South Pole, AB Sustain, ERM, BSR, Ecofys, Navigant or The Carbon Trust among many others are critical to our success in reducing our environmental impact. As an example, our collaboration with Quantis in developing in 2017 a Land-Use Change report. Tobacco growing is not a significant contributor to deforestation through land-use change, mainly due to the decreasing area of tobacco farmland. A 2017 study using the Big Chain Tool⁵¹ confirmed this for PMI's tobacco supply chain. In 2017, we supported a land-use change study, which led to the publication of the Land-Use Change Guidance, <https://quantis-intl.com/lucguidance/>

C-AC12.2/C-FB12.2/C-PF12.2

(C-AC12.2/C-FB12.2/C-PF12.2) Do you encourage your suppliers to undertake any agricultural or forest management practices with climate change mitigation and/or adaptation benefits?

Yes

C-AC12.2a/C-FB12.2a/C-PF12.2a

(C-AC12.2a/C-FB12.2a/C-PF12.2a) Specify which agricultural or forest management practices with climate change mitigation and/or adaptation benefits you encourage your suppliers to undertake and describe your role in the implementation of each practice.

Management practice reference number

MP1

Management practice

Other, please specify (Responsible Sourcing Principles)

Description of management practice

In 2017, we released our Responsible Sourcing Principles (RSP) and Implementation Guidelines, which established the foundation for a more comprehensive and systematic approach to addressing supply chain sustainability beyond our agricultural supply chain. The RSP provides PMI's expectations in the areas of human rights, environment, and business integrity. The environment section covers environmental compliance and management, and resource consumption and waste minimization. In the area of climate change, our RSP encourages suppliers to review, identify and minimize their environmental impacts, especially regarding land use, waste, emissions, energy and water consumption. Our RSP also encourages supplier set targets for improvement, measure performance and report on them.

Your role in the implementation

Operational

Explanation of how you encourage implementation

The RSP applies to all suppliers doing business with PMI, except for tobacco farmers, who must follow our GAP/ALP program. The RSP is translated into 13 languages to accommodate local requirements. We rolled out the RSP to global partners that covered 99% of our total spend on global vendors by December 2017.

Climate change related benefit

Emissions reductions (mitigation)

Increasing resilience to climate change (adaptation)

Comment

Management practice reference number

MP2

Management practice

Other, please specify (Good Agricultural Practices Program)

Description of management practice

Tobacco growing, harvesting and curing account for around 40 percent of our carbon footprint. We are working with farming communities to reduce the environmental footprint of tobacco curing and growing. We do that through our Good Agricultural Practices (GAP) program and strategic initiatives such as curing barn improvements and reforestation. GAP lays out extensive agricultural environmental practices for farmers to adopt; these practices cover effective farming techniques, the safe storage, handling and use of chemicals (crop protection agents), water and waste management, energy and raw material efficiency. GAP also covers soil management/conservation, biodiversity and the sustainable use of wood. GAP implementation helps us deliver on our 2020 target for CO2 reduction in our value chain.

Your role in the implementation

Financial

Knowledge sharing

Explanation of how you encourage implementation

We mandate GAP implementation for suppliers of tobacco to PMI. Our Leaf Department supports our suppliers in implementation and, where we directly contract farmers, our field technicians provide direct support.

Climate change related benefit

Emissions reductions (mitigation)

Increasing resilience to climate change (adaptation)

Comment

C-AC12.2b/C-FB12.2b/C-PF12.2b

(C-AC12.2b/C-FB12.2b/C-PF12.2b) Do you collect information from your suppliers about the outcomes of any implemented agricultural/forest management practices you have encouraged?

Yes

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Trade associations

Other

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

U.S. Council for International Business (USCIB)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

One of the main areas of focus of the USCIB is sustainable development. They state that the “economic growth and energy of the U.S. depends on international regulations that promote strong private-sector role in wise management and use of resources, effective environmental stewardship and greener growth and needs: (1) Sustainable Cost-effective, science and risk-based cooperative environmental and energy policies to address the challenges of climate change while protecting energy security, promoting innovation and efficiency and advancing resilience to climate impacts; and provide multilateral solutions to trans-boundary environment, energy and climate challenges, and reject unilateral, arbitrary measures that disqualify technology or energy options; and (2) Pro-growth, market oriented policies that promote sustainable development to develop multilateral and national partnership frameworks to incentivize private sector involvement in sustainable development planning, implementation and risk allocation minimization; and maintain technology neutral policies and other enabling frameworks to encourage trade and investment in cleaner technologies and energy sources .

How have you, or are you attempting to, influence the position?

Our trade association memberships relate to specific business priorities which do not currently include climate change. We are not currently involved in, nor do we influence, trade association positions on climate change.

Trade association

Trans-Atlantic Business Council

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Their Energy and Climate Working Group states: "Energy is irreversibly tied to climate. In this realm, transatlantic coordination of energy policies and climate action targets could yield substantial results, as both the US and the EU are the world's leading energy consumers."

How have you, or are you attempting to, influence the position?

Our trade association memberships relate to specific business priorities which do not currently include climate change. We are not currently involved in, nor do we influence, trade association positions on climate change.

Trade association

National Center for Asia-Pacific Economic Cooperation

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

APEC have supported the development of an energy strategy study which includes: "Expand and Diversify Supply of Energy Resources; Promote Conservation and Improve Efficiency; Promote Open and Efficient Energy Markets; Clean Energy Use and Technology Innovation."

How have you, or are you attempting to, influence the position?

Our trade association memberships relate to specific business priorities which do not currently include climate change. We are not currently involved in, nor do we influence, trade association positions on climate change.

Trade association

US ASEAN Business Council

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Their Energy Committee covers broad energy improvement topics including energy efficiency and renewables.

How have you, or are you attempting to, influence the position?

Our trade association memberships relate to specific business priorities which do not currently include climate change. We are not currently involved in, nor do we influence, trade association positions on climate change.

Trade association

EconomieSuisse

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Energy and Environment section: "Climate protection concerns us all and Swiss business is pointing the way. Based on voluntary measures it has successfully charted a path of CO2 reduction and continues to stay the course. Innovation in this sector is doubly advantageous: resource-friendly processes help cut costs and may evolve into business ideas. Regardless of any decision for or against certain technologies we promote a reliable, affordable, and environmentally friendly energy supply...."

How have you, or are you attempting to, influence the position?

Our trade association memberships relate to specific business priorities which do not currently include climate change. We are not currently involved in, nor do we influence, trade association positions on climate change.

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

We work with not-for-profit organizations and governments to support communities on environmental sustainability topics including sustainable forestry, reforestation, controlled use of pesticides in agriculture, sustainable rural living conditions and education; all of these can have an influence on climate change improvement, adaptation and mitigation. Through specific contributions in 2017, PMI supported projects to protect and enhance natural resources, implement conservation agriculture, provide clean water, cater for food security, and improve the livelihoods of people living in rural communities. Selected examples include:

- Our efforts to replace cigarettes with smoke-free products will require less tobacco. Though this reduces resource consumption and associated GHG emissions, we recognize this may adversely impact the livelihood of our suppliers. We are thus proactively supporting crop diversification to prepare for this market shift. We are following a multi-stakeholder approach involving suppliers, NGOs, and other companies active in the agricultural sector. We are, for example, partnering with USAID Malawi Feed the Future Program to diversify smallholder farmers production away from tobacco and into other food crops such as soybean or groundnuts, and have joined the Global Agribusiness Alliance (GAA). Malawi has been selected as one of the priority markets for our diversification efforts as tobacco accounts for more than half of the country's export. We are also working with our tobacco suppliers and their farmers to introduce additional varieties of alternative crops to smallholder farmers. This allows them to not only grow food crops for their own consumption, but also crops that can serve as additional sources of income. As part of this work, farm trials are conducted to identify high-yielding, disease-resistant, and drought-tolerant varieties of groundnuts and soy beans that should ensure top performance for the Malawian climatic conditions. Our tobacco suppliers are supporting the selected farmers for this trial by providing and distributing crop inputs, helping with insurance and storage, as well as providing advice by their agronomists and support in the marketing of their production. A key component for the success of these initiatives is ensuring the availability of water when required, regardless of whether the alternative crops are grown during the dry or rainy season. We are working with Netafim, a company specialized in precision irrigation, to promote relevant solutions. Solar boreholes and storage tanks will be constructed and different irrigation systems will be tested. Another example of our work in this area is in September 2017, PMI announced its support for the establishment of the Foundation for a Smoke-Free World. The Foundation is an independent body, governed by its Board of Directors. The Foundation focuses on partnering with agricultural, rural development, smallholder experts and farmers to identify alternative livelihoods for tobacco farmers.
- Following the severe drought that affected South-Eastern African countries, PMI partnered with the Swiss Red Cross to support interventions promoting food security. In Malawi, the project provided school meals to children attending pre- and primary schools, promoted the creation of school gardens, and increased the knowledge on nutrition among teachers and

community members. In Mozambique, activities focused on the distribution of seeds, fertilizers, irrigation equipment, and tools to local farmers, as well as on the delivery of training to strengthen their resilience to future crises and climate-related disasters.

- Climate change will increase the frequency and severity of extreme weather events. Our disaster and emergency relief support helps communities around the world rebuild after a crisis. We deliver immediate help to the most vulnerable. Our work also helps build resilience so that communities are better prepared for future emergencies. For example, PMI donated USD 340,000 to a house re-construction program in Oaxaca and Chiapas (Mexico) in response to the severe earthquake that hit the country in 2017. The project also included awareness raising on good sanitation practices and the provision of hygiene materials.
- In Mexico, PMI continued to support an initiative of the Natural Areas and Sustainable Development Civil Partnership aiming at creating and developing new business opportunities for small agricultural producers, while increasing their resources management capacity and knowledge of eco-technology solutions. A key component of the project was the implementation of sustainable backyard plots in homes and schools, with the objective of increasing water availability, diversify energy sources, and reduce waste and pollution.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

PMI operates within an overarching Code of Conduct to a set of internal policies, which we call our Guidebook for Success. These policies cover our mandatory requirements and processes in relation to environment, health and safety (EHS) and sustainability, which includes our climate change strategy; corporate contributions; and interaction with government officials, among others. As part of these management controls, we conduct due-diligence to ensure consistency with our Code and Principles, and to check potential compliance and reputation issues when joining trade associations. We belong to many carefully selected business and trade associations around the world. We work with these groups because they represent our industry and the larger business community in policy discussions on issues where we have a common interest or objective. Our support to these organizations and groups complies with applicable laws and our own principles and practices. We routinely evaluate our participation to ensure that the groups' objectives align with the long-term interests of PMI and its shareholders, and that their activities continue to reflect PMI's values and high standards of conduct. There are times when we may not agree with certain positions adopted by the organizations we support. In these instances, we may choose to withdraw our participation or support. Other external facing activities related to climate change are also reviewed by our Corporate Affairs and Sustainability teams to ensure consistency with our climate change strategy. For more information see: https://www.pmi.com/resources/docs/default-source/our_company/code-of-

conduct/english_code_of_conduct_external_online_180116.pdf?sfvrsn=f5c386b5_6 ; and
https://www.pmi.com/resources/docs/default-source/our_company/membership-transparency-pmi.pdf?sfvrsn=72b08ab5_8

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In voluntary sustainability report

Status

Complete

Attach the document

[pmi-sustainability-report-2017.pdf](#)

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

Publication

In mainstream reports

Status

Complete

Attach the document

[PMI_2017_AnnualReport.pdf](#)

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Publication

In voluntary communications

Status

Complete

Attach the document

[In focus_environment key programs.pdf](#)

Content elements

Emissions figures

Other, please specify (Key environmental programs description)

C13. Other land management impacts

C-AC13.2/C-FB13.2/C-PF13.2

(C-AC13.2/C-FB13.2/C-PF13.2) Do you know if any of the management practices mentioned in C-AC12.2a/C-FB12.2a/C-PF12.2a that were implemented by your suppliers have other impacts besides climate change mitigation/adaptation?

Yes

C-AC13.2a/C-FB13.2a/C-PF13.2a

(C-AC13.2a/C-FB13.2a/C-PF13.2a) Provide details of those management practices implemented by your suppliers that have other impacts besides climate change mitigation/adaptation.

Management practice reference number

MP1

Overall effect

Positive

Which of the following has been impacted?

Other, please specify (Environmental Management)

Description of impacts

In addition to greenhouse gas emissions, environmental impacts of our suppliers can include impacts to: • Air, such as through sulfur dioxide emissions from burning fuel oil in boilers which can lead to acid rain; • Water, such as wastewater discharge from plating operations, which can lead to poisoning of fish and metal contamination of plants; • Soil, such as through leakages from storage tanks which could lead to soil contamination.

Have any response to these impacts been implemented?

Yes

Description of the response(s)

The environment section of our Responsible Sourcing Principles (RSP) and Implementation Guidelines covers environmental compliance and management, and resource consumption and waste minimization. Our RSP encourages suppliers review, identify and minimize their environmental impacts.

Management practice reference number

MP2

Overall effect

Positive

Which of the following has been impacted?

Biodiversity

Soil

Other, please specify (Human Health & Labor Practices)

Description of impacts

The environmental impact of tobacco farming can be significant, and the GAP program is therefore crucial for managing and reducing our overall environmental footprint. In addition to greenhouse gas emissions, traditional tobacco farming uses hazardous Crop Protection Agents (CPA) that has adverse impacts on biodiversity, soil, water and human health.

Have any response to these impacts been implemented?

Yes

Description of the response(s)

Due to the nature of PMI's business, there are no significant impacts on biodiversity or deforestation from our own operations. Where we do have a larger role to play on biodiversity is in our supply chain. Impacts linked to tobacco farming are addressed through our Good Agricultural Practices program for tobacco suppliers, where we describe our requirements for good environmental practices, including integrated pest management and soil conservation practices, as well as biodiversity management. GAP provides guidance on biodiversity management practices and requires our tobacco suppliers to develop and implement a biodiversity management plan that incorporates, and goes beyond compliance with the applicable laws, and

regulations for tobacco- and forest-growing areas. Tobacco production areas must not be located in places that could cause negative effects on national parks, wildlife refuges, biological corridors, forestry reserves, buffer zones, or other public or private biological conservation areas.

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Andre Calantzopoulos, Chief Executive Officer (CEO)	Chief Executive Officer (CEO)